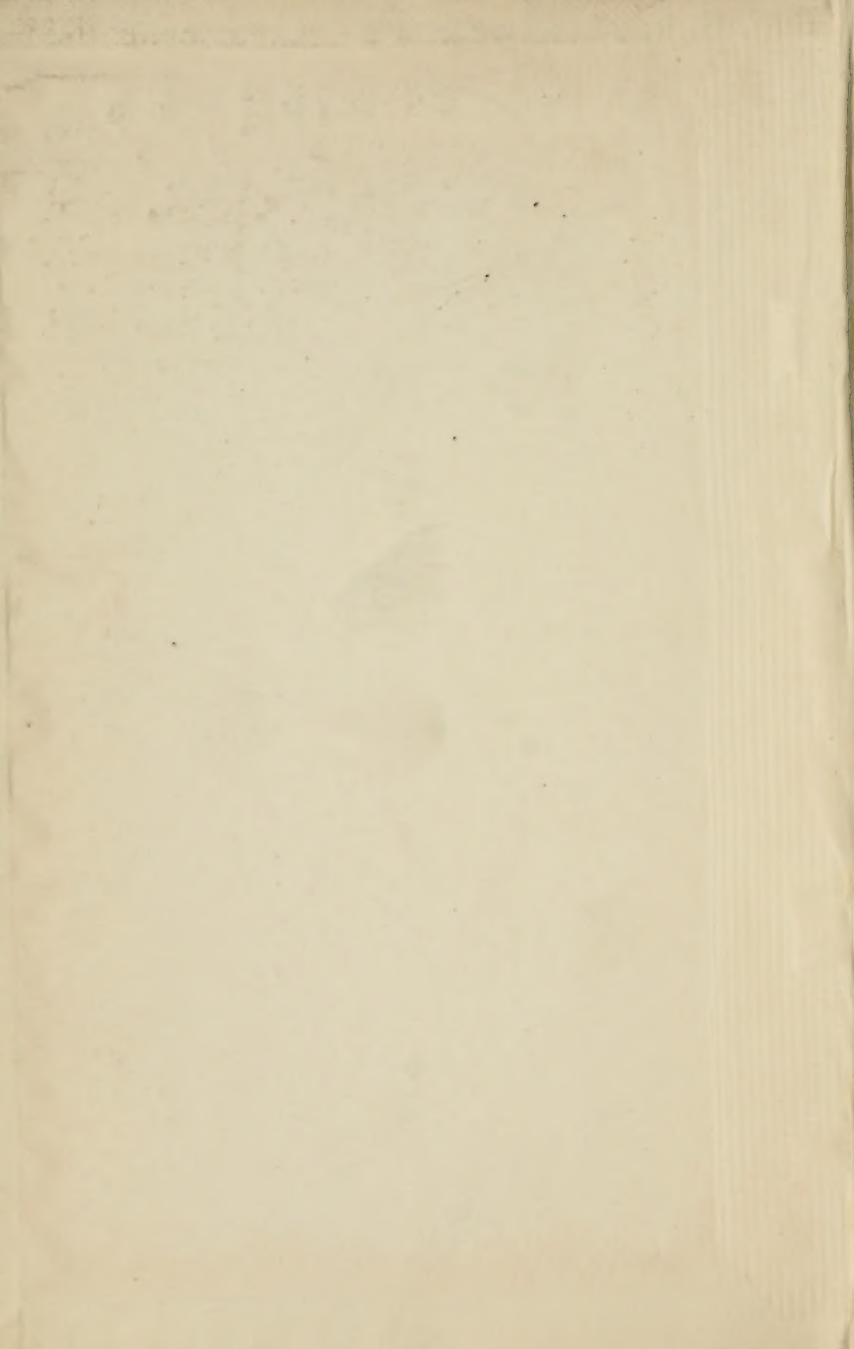
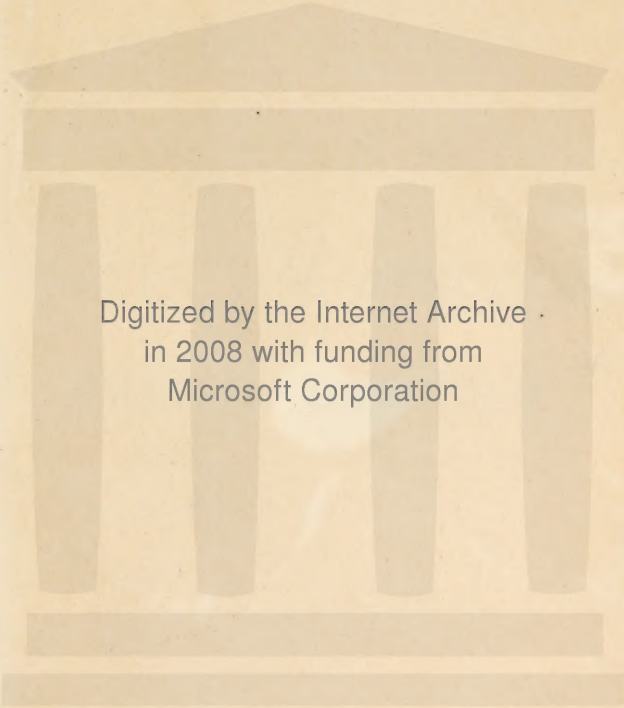


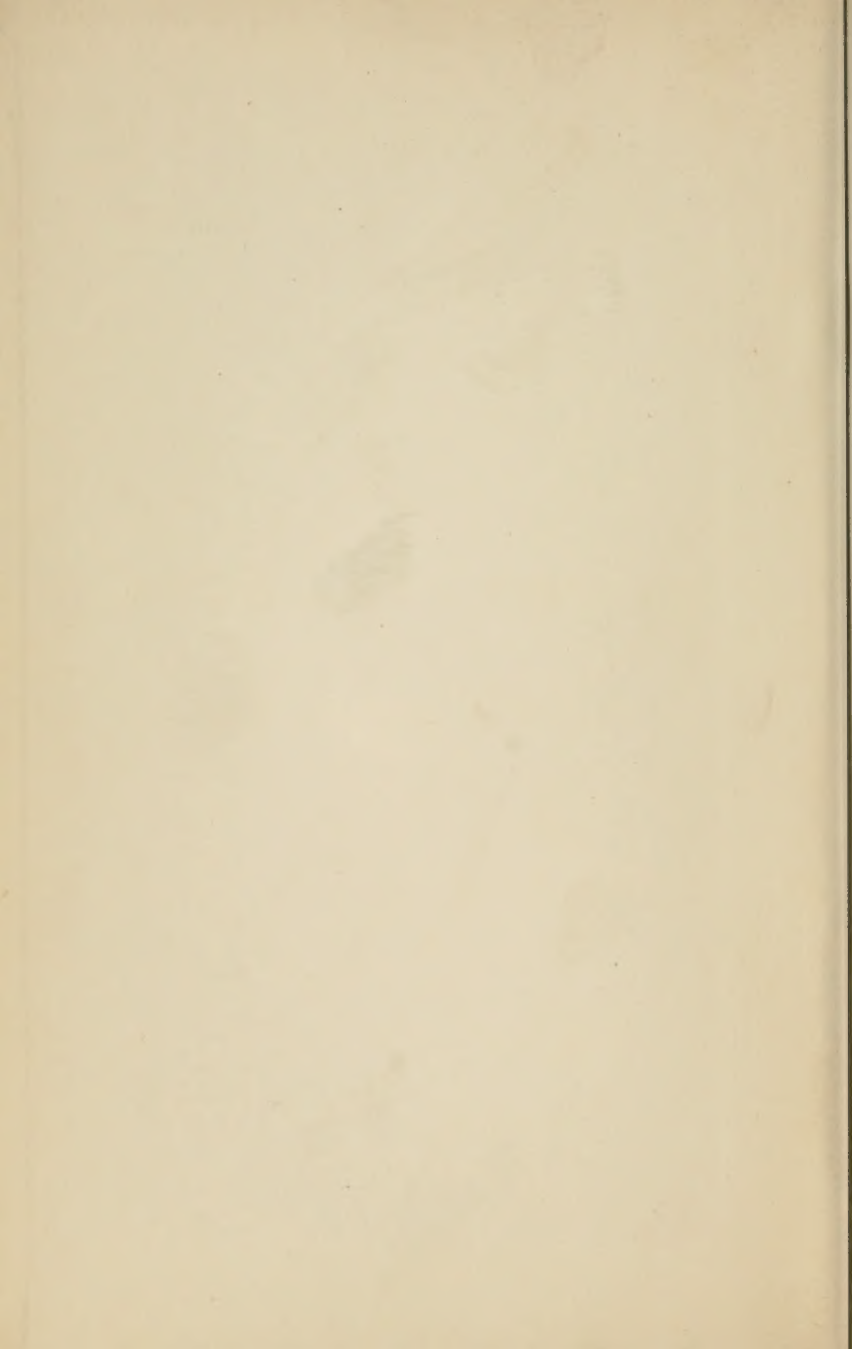
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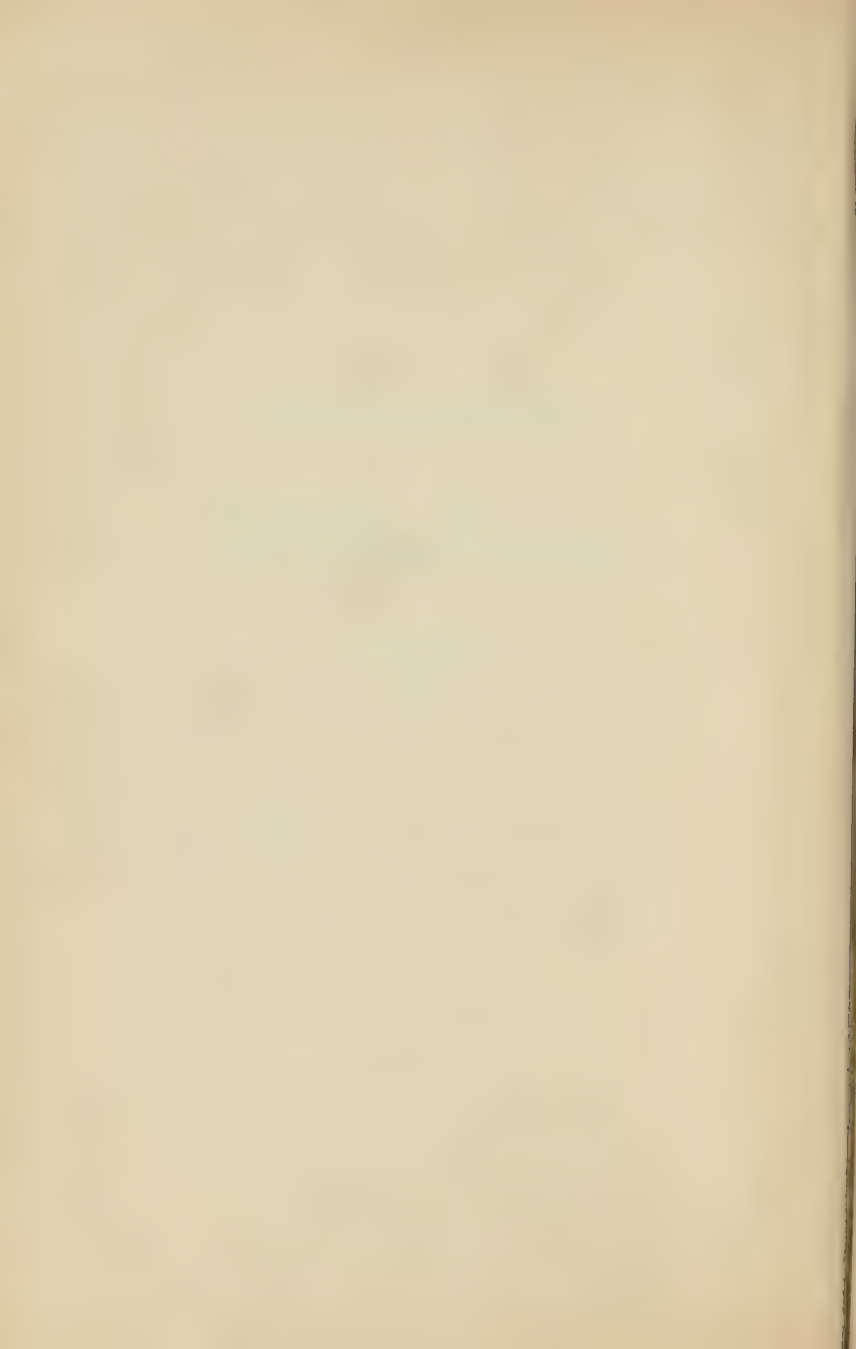
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SEPTEMBER—1900.

1	S	Last day for entry for Matriculation Exam.
2	S	
3	M	
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	S	
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	S	
17	M	Matriculation Exam. commences.
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	S	
24	M	
25	Tu	
26	W	
27	Th	
28	F	
29	S	<i>MICHAELMAS DAY.</i>
30	S	

OCTOBER—1900.

1	M	Opening of University Session (Med.). Mason College Op., 1880.
2	Tu	Opening of University Session (Science and Arts).
3	W	
4	Th	
5	F	
6	S	
7	S	
8	M	
9	Tu	
10	W	
11	Th	
12	F	
13	S	
14	S	
15	M	
16	Tu	
17	W	
18	Th	
19	F	
20	S	
21	S	
22	M	
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	S	
29	M	
30	Tu	
31	W	

NOVEMBER—1900.

1	Th
2	F
3	S
4	S
5	M
6	Tu
7	W
8	Th
9	F
10	S
11	S
12	M
13	Tu
14	W
15	Th
16	F
17	S
18	S
19	M
20	Tu
21	W
22	Th
23	F
24	S
25	S
26	M
27	Tu
28	W
29	Th
30	F

DECEMBER—1900.

1	S	
2	S	
3	M	
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	S	
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	WINTER TERM ENDS.
16	S	
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	S	
24	M	
25	Tu	CHRISTMAS DAY.
26	W	Bank Holiday.
27	Th	
28	F	
29	S	
30	S	
31	M	

JANUARY—1901.

1	Tu
2	W
3	Th
4	F
5	S
6	S
7	M
8	Tu
9	W
10	Th
11	F
12	S
13	S
14	M
15	Tu
16	W
17	Th
18	F
19	S
20	S
21	M
22	Tu
23	W
24	Th
25	F
26	S
27	S
28	M
29	Tu
30	W
31	Th

SPRING TERM COMMENCES.

FEBRUARY—1901.

1	F
2	S
3	S
4	M
5	Tu
6	W
7	Th
8	F
9	S
10	S
11	M
12	Tu
13	W
14	Th
15	F
16	S
17	S
18	M
19	Tu
20	W
21	Th
22	F
23	S
24	S
25	M
26	Tu
27	W
28	Th

Sir Josiah Mason born.

MARCH—1901.

1	F	
2	S	
3	S	
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	
10	S	
11	M	
12	Tu	
13	W	
14	Th	
15	F	
16	S	
17	S	
18	M	
19	Tu	
20	W	
21	Th	
22	F	
23	S	SPRING TERM ENDS.
24	S	Royal Charter of University of Birmingham granted, 1900.
25	M	<i>LADY DAY.</i>
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	S	Medical Winter Session ends.

APRIL—1901.

1	M	
2	Tu	
3	W	
4	Th	
5	F	<i>GOOD FRIDAY.</i>
6	S	
7	<i>S</i>	<i>EASTER DAY.</i>
8	M	Bank Holiday.
9	Tu	
10	W	
11	Th	
12	F	Exam. in Elementary Biology (Faculty of Medicine) commences.
13	S	
14	<i>S</i>	
15	M	
16	Tu	SUMMER TERM COMMENCES.
17	W	
18	Th	
19	F	
20	S	
21	<i>S</i>	
22	M	
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	<i>S</i>	
29	M	
30	Tu	

MAY—1901.

1	W	
2	Th	
3	F	
4	S	
5	§	
6	M	
7	Tu	
8	W	
9	Th	
10	F	
11	S	
12	§	
13	M	Last day for entry for Matriculation Exam.
14	Tu	
15	W	
16	Th	
17	F	
18	S	
19	§	
20	M	
21	Tu	
22	W	
23	Th	
24	F	Queen Victoria b. 1819.
25	S	
26	§	<i>WHITSUN DAY.</i>
27	M	Bank Holiday.
28	Tu	
29	W	
30	Th	
31	F	

JUNE—1901.

1	S	
2	<i>S</i>	
3	M	Matriculation Examination commences.
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	<i>S</i>	
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	<i>S</i>	Sir Josiah Mason died, 1881.
17	M	
18	Tu	
19	W	
20	Th	Queen's Accession, 1837.
21	F	
22	S	
23	<i>S</i>	
24	M	
25	Tu	Summer Medical Exams. commence.
26	W	
27	Th	
28	F	
29	S	SUMMER TERM ENDS.
30	<i>S</i>	

JULY—1901.

1	M
2	Tu
3	W
4	Th
5	F
6	S
7	§
8	M
9	Tu
10	W
11	Th
12	F
13	S
14	§
15	M
16	Tu
17	W
18	Th
19	F
20	S
21	§
22	M
23	Tu
24	W
25	Th
26	F
27	S
28	§
29	M
30	Tu
31	W

AUGUST—1901.

1	Th	
2	F	
3	S	
4	S	
5	M	Bank Holiday.
6	Tu	
7	W	
8	Th	
9	F	
10	S	
11	S	
12	M	
13	Tu	
14	W	
15	Th	
16	F	
17	S	
18	S	
19	M	
20	Tu	
21	W	
22	Th	
23	F	
24	S	
25	S	
26	M	
27	Tu	
28	W	
29	Th	
30	F	
31	S	

SEPTEMBER—1901.

1	S
2	M
3	Tu
4	W
5	Th
6	F
7	S
8	S
9	M
10	Tu
11	W
12	Th
13	F
14	S
15	S
16	M
17	Tu
18	W
19	Th
20	F
21	S
22	S
23	M
24	Tu
25	W
26	Th
27	F
28	S
29	S
30	M

MICHAELMAS DAY.

UNIVERSITY OF BIRMINGHAM.

(IN WHICH IS INCORPORATED

MASON UNIVERSITY COLLEGE.)

INTRODUCTION.

REPORT OF THE EXECUTIVE COMMITTEE

For the Promotion of the University of Birmingham,

PRESENTED TO THE

SPECIAL GENERAL MEETING OF THE COURT OF GOVERNORS OF THE UNIVERSITY,

On THURSDAY, the 31st MAY, 1900.

The Executive Committee beg leave to report that they were appointed at a Public Meeting held in the Council House, on the 1st July, 1898, by a resolution of which the following is a copy :—

“That the following gentlemen, subject to their consent to act, be and are hereby appointed an Executive Committee to prepare a Scheme for the University, and, in co-operation with the Council of Mason University College, to take all such steps as may be necessary to carry it into effect, and that they have power to add to their number ” :—

Chairman :

ALDERMAN F. C. CLAYTON, J.P.

Hon. Treasurers :

GEORGE H. KENRICK, Esq.

CHARLES SHOWELL, Esq.

Secretary :

GEORGE H. MORLEY.

The Right Hon. THE LORD MAYOR OF BIRMINGHAM.

The Right Hon. THE EARL OF DARTMOUTH.

The Right Hon. THE VISCOUNT COBHAM.

The Right Hon. LORD WINDSOR.

The Right Hon. J. CHAMBERLAIN, M.P.

Sir HENRY WIGGIN, Bart.

Sir B. HINGLEY, Bart.

Sir J. C. HOLDER, Bart.

Sir ALFRED HICKMAN, M.P.

Sir JAMES SMITH.

OSMUND AIRY, Esq., M.A.

G. S. ALBRIGHT, Esq., M.A.

Professor GILBERT BARLING, M.B., B.S., F.R.C.S.

J. GIBBS BLAKE, Esq., B.A., M.D.

J. THACKRAY BUNCE, Esq.
 GEORGE CADBURY, Esq.
 AUSTEN CHAMBERLAIN, Esq., M.A., M.P.
 ARTHUR S. DIXON, Esq., M.A.
 JOHN FEENEY, Esq.
 GEORGE W. GROSVENOR, Esq.
 CHARLES HARDING, Esq.
 Principal HEATH, M.A., D.Sc.
 LAURENCE W. HODSON, Esq.
 JAMES R. HOLLIDAY, Esq., B.A.
 GEORGE JAMES JOHNSON, Esq.
 GEORGE HOPE JOHNSTONE, Esq.
 ARTHUR KEEN, Esq.
 JOHN W. LEA, Esq.
 THOMAS GROSVENOR LEE, Esq., B.A.
 JOHN HENRY LLOYD, Esq., M.A.
 Professor JORDAN LLOYD, M.B., M.S., F.R.C.S.
 S. THEODORE MANDER, Esq.
 J. T. MIDDLEMORE, Esq.
 EBENEZER PARKES, Esq., M.P.
 R. A. PINSENT, Esq.
 Professor JOHN H. POYNTING, D.Sc., F.R.S.
 EDWIN RICKARDS, Esq., M.A., M.B., F.R.C.P.
 C. A. SMITH-RYLAND, Esq.
 Professor PRIESTLEY SMITH, M.R.C.S.
 E. J. SMITH, Esq.
 GEORGE TANGYE, Esq.
 Rev. A. R. VARDY, M.A.
 Professor B. C. A. WINDLE, M.D., D.Sc., F.S.A.

The following members expressed their regret that they were unable to serve on the Committee :—

Lord DARTMOUTH.	Lord WINDSOR.
Lord COBHAM.	Sir ALFRED HICKMAN.

Messrs. JOHN FEENEY, GEORGE CADBURY, and GEORGE TANGYE.

At the first meeting the following gentlemen were added to the Committee :

Messrs. WILLIAM HARRIS, A. W. STILL and THOMAS TURNER,
 and Professors W. MACNEILE DIXON, HERMANN G. FIEDLER,
 and CHARLES LAPWORTH.

The Executive Committee appointed three Sub-Committees in connection with the movement, viz. :—

- (1) A Canvassing Sub-Committee.
- (2) A Finance Sub-Committee.
- (3) A Management Sub-Committee.

Altogether fifty-four meetings have been held.

(1) CANVASSING SUB-COMMITTEE.

The Executive Committee have received from the Canvassing Sub-Committee a report of their proceedings up to the 28th of February, 1900. Eight meetings were held under the Chairmanship of Mr. Alderman Clayton. At the date of their first meeting (the 19th October, 1898), the total sum promised to the Endowment Fund was £103,568, this sum representing the result of the private canvass for donations instituted at a meeting held in Mason University College, on the 3rd of February, 1898, under the Chairmanship of the Lord Mayor (Mr. Alderman Beale).

By March, 1899, the total had risen to the sum of £135,000. In this month an offer was received by Mr. Chamberlain from an anonymous donor, unconnected with Birmingham, to give £25,000, on condition that a total of £250,000 was raised.

On May 12th, 1899, when the Fund had reached £143,000, Mr. Chamberlain communicated a letter which he had received from Mr. Andrew Carnegie offering £50,000 for the establishment of a special Science Department on the same condition as that attached to that of the Anonymous Donor, who at the same time expressed his willingness to increase his donation from £25,000 to £37,500.

Mr. Carnegie's letter was published, and within a week the condition of both gifts was fulfilled, upwards of £250,000 being promised.

Subsequently a General Appeal was issued for donations, and 25,623 copies were sent out; only 175 replies were received, covering promises amounting to about £2,000. The cost of the Appeal, including postage, was £174 18s. 6d.

In acknowledging a vote of thanks passed to the Anonymous Donor, he wrote that he was of opinion that a quarter of a million would be found insufficient even for the commencing endowment of the University, and he offered a further sum of £12,500 on condition

that the Fund reached a total of £300,000 before the end of the year 1899. With a view to meet this time limit and secure the last £12,500, strenuous efforts were made to raise the necessary amount, and some large donors doubled, or largely increased, their previous donations.

On the 28th of February last the Sub-Committee reported that the Fund had reached upwards of £326,500, so that the last £12,500 offered by the Anonymous Donor had been secured. In the opinion of the Sub-Committee this very gratifying success was mainly due to the munificent donation promised by Mr. Charles Holcroft, of the Shrubbery, Kingswinford, who addressed the following communication to Mr. Chamberlain :—

“The Shrubbery, Kingswinford,
10th October, 1899.

My Dear Sir,

PROPOSED UNIVERSITY OF BIRMINGHAM.

After perusing the papers which you have sent to me, I have come to the conclusion that it is my duty to assist this scheme, for I cannot be unmindful that what I may contribute was acquired within the area which the proposed Institution is intended to serve.

I believe, too, that the new University will certainly benefit not only the Industries of Birmingham, but also the enterprises of the surrounding districts.

The canvass has, so far, been very successful and must be most gratifying to the promoters of the scheme. The list of contributions shows that the citizens of Birmingham have supported the undertaking with their accustomed generosity, a liberality to which there seems to be no limit.

I do not suppose that the conditional promises made by Mr. Carnegie and the anonymous friend would be withdrawn in the event of the conditions being not quite fulfilled; but, in order to remove all doubt on this point, I am very willing to contribute Twenty Thousand Pounds, the sum required to enable the promoters to carry out the first part of their noble scheme.

I am, yours faithfully,

(Signed) CHAS. HOLCROFT.

THE RIGHT HON. J. CHAMBERLAIN, M.P.,
Highbury, Birmingham.”

The Sub-Committee believed that there were a number of additions to be made to the list during the next few months from limited companies, private firms and individuals, and that the total of the Fund was likely to be considerably augmented from those sources.

The Executive Committee have now the pleasure to report that additional donations have been promised, bringing the Fund up to a total sum of £327,468 2s. 3d.

(2) FINANCE SUB-COMMITTEE.

This Sub-Committee, under the Chairmanship of Mr. G. H. Kenrick, was appointed for the purpose of investing the moneys received on account of donations by the Hon. Treasurers (Messrs. G. H. Kenrick and Charles Showell). The Sub-Committee report that a total sum of £180,775 16s. 8d. has been received, and that they have invested £59,497 11s. 10d. in the purchase of guaranteed Railway Debenture and Preference Stock; that they have placed £30,000 on loan with the Corporation of Birmingham, and have advanced to Mason University College a total sum of £52,950. Of this sum £29,950 has been expended by the College in the purchase of freehold properties, £13,000 has been applied in paying off a mortgage resulting in a considerable saving of interest, and the balance of £10,000 has been placed to the credit of the College Bankers in reduction of the overdraft. A sum of £35,695 19s. 4d. is standing to the credit of the Hon. Treasurer's account with Lloyds Bank.

(3) MANAGEMENT SUB-COMMITTEE.

This Committee elected the late Mr. J. Thackray Bunce as Chairman, and appointed three Sub-Committees:—

(a) "A Special Sub-Committee who were instructed to consider and report as to the amount that will be required before an application for a Charter should be made, with an outline scheme as to how such amount should be applied." The Sub-Committee reported what appeared to be the best organization for the University so far as the establishment of additional Professorships and Lectureships was concerned, and dealt with the financial

prospects of the University upon the basis of an Endowment Fund of £200,000. But having regard to the future developments, especially those brought about by the offers of Mr. Andrew Carnegie and the Anonymous Donor, the recommendations of the Sub-Committee have not been further dealt with in view of the fact that they were based upon a very much smaller endowment than has now been obtained.

(b) A Charter Sub-Committee presided over by Mr. G. J. Johnson. This Sub-Committee worked out the details of the Charter after numerous conferences with Counsel, and their Report was presented direct to the Executive Committee at the meeting held on the 31st of May, 1899, at which Mr. Chamberlain was present. After various alterations had been made in the draft Charter, it was deposited with the Privy Council who suggested very few amendments, and those only of a technical character. The Charter was sealed by Warrant under the Queen's Sign Manual on the 24th of March last, and received in Birmingham on the 5th of May. It has been printed and circulated among the members of the University Court.

Through the intervention of the Right Hon. Jesse Collings, M.P., the Treasury have been induced to remit the usual fee of 27s. on every name mentioned in the Schedule to the Charter, the names being 227 in number. The Executive Committee have expressed to Mr. Collings their cordial thanks for his valuable assistance.

(c) An Advisory Committee. This Committee, under the Chairmanship of Mr. Arthur Chamberlain, was appointed "to report as to the best manner of employing the funds promised by Mr. Carnegie and an Anonymous Donor for Scientific and Commercial training respectively, and especially to make arrangements for a visit to America to inspect similar institutions in the United States and Canada, to report as to the building and equipment required and to furnish an estimate of the expenses." The Executive Committee append the full text of the Report of this Committee (Appendix III.), and they desire to express their indebtedness to Mr. G. H. Kenrick and Professors Poynting and Burstall who visited Canada and the United States last Autumn, and who presented a valuable report containing most important and useful information which it would have been impossible to collect except by personal inspection of the various Universities and Colleges. The Executive Committee gratefully accepted the offer of Mr. Andrew Carnegie to pay the expenses to America of Professors Poynting and Burstall.

In bringing their labours for the foundation of a University of Birmingham to a close, the Executive Committee congratulate the City and District upon the

grant of a Royal Charter incorporating the University, and desire to place upon record their high sense of the value of Mr. Chamberlain's influence which has contributed in so marked a degree to the success of the movement in obtaining such a splendid foundation for an adequate Endowment, and in securing a broad and liberal Charter of Incorporation.

F. C. CLAYTON,

23rd May, 1900.

Chairman.

REPORT OF THE COUNCIL OF MASON UNIVERSITY COLLEGE

PRESENTED TO THE

SPECIAL GENERAL MEETING OF THE
COURT OF GOVERNORS OF THE UNIVERSITY,

On Thursday, the 31st May, 1900.

The Council beg leave to report that at the First Meeting of the Court of Governors of the College held on the 13th of January, 1898, the Right Hon. J. Chamberlain, M.P. (President) in the Chair, the following resolution proposed by the Right Hon. Lord Windsor and seconded by Professor Tilden, F.R.S., was unanimously adopted :—

“That having regard to the development of higher education in the Midlands, and to the immediate requirements and prospective interests of such education, the Governors of Mason University College are of opinion that the time has arrived for the establishment of a University in Birmingham, and that the Governors will give their hearty support to the measures requisite to obtain a Royal Charter for that purpose, and generally for the promotion of the object.”

At a Meeting of this Council on the 2nd November, 1898, it was resolved :—

“That in view of the fact that a Committee has been formed at a Public Meeting called by the Lord Mayor for the purpose of promoting the establishment of a University in Birmingham, and that a sum of upwards of £100,000 has already been promised to the Endowment Fund, the Council recommend the Court of Governors to authorise them to prepare and present a Petition to Her Majesty in Council, praying that a Royal Charter may be granted establishing a University in Birmingham, as contemplated by Section 39 of the Mason University College Act.”

“That the Council further recommend to the Court of Governors that the Scheme for the University shall include the transfer of all the endowments, buildings, equipment and staff of the College, and their absorption by the University, provided that the Governing Body of the University shall include every member of the Court of Governors for the time being of Mason University College.”

The Court of Governors thereupon passed the following Resolutions :—

“That this Court approves of the proposal that the scheme for a University of Birmingham shall include the transfer of all the endowments, buildings, equipment and staff of the College, and their absorption by the University, provided that the Governing Body of the University shall include every member of the Court of Governors for the time being of Mason University College.”

“That the Council be and are hereby authorised to take all necessary measures for obtaining a Royal Charter for the establishment of a University of Birmingham.”

In September, 1899, the Council appointed a Special Committee, consisting of Mr. Alderman Clayton (Chairman), Dr. J. Gibbs Blake (Vice-Chairman), Mr. G. J. Johnson, Mr. G. H. Kenrick, Principal Heath and Dr. Windle, “to conduct and continue on behalf of the Council the application for a Royal Charter for the University of Birmingham, and also to promote the Bill for the transfer of the assets and liabilities of the College to the University.”

At that time it was hoped that the Charter for the establishment of the University would have been obtained in the Autumn of last year, but, in consequence of the draft Charter not being settled in time to allow of it

being considered and laid on the table of both Houses thirty days before the close of the Session of 1899, the Charter could not be granted until the 24th of March last. Acting under the advice of Mr. G. J. Johnson, in order that if possible the Bill for the absorption of the College in the University might be passed in the Session of 1900, thus saving twelve months time, it was decided to deposit the Bill in December last, and to proceed with it as far as possible pending the granting of the Charter. The Council having approved of a draft of the Bill, it was deposited, and after passing through the various stages in both Houses with some amendments, it received the Royal Assent on the 25th instant.

The Act contains some exceedingly important provisions. After providing that it shall come into operation on the 1st of October next, on which day Mason University College shall be dissolved, it deals with the transfer to the University of all the property of every description belonging to the College. The University is empowered to hold qualifying examinations in Medicine, Surgery, and Midwifery, for the purpose of registration under the Medical Acts, as if the University had been a University in the United Kingdom, legally qualified at the passing of the Medical Act, 1886, to grant diplomas in Medicine and Surgery. Further, the Council of the University are empowered to choose one representative to be a member of the General Medical Council. By Clause 13 it is provided that students in the Faculty of Medicine of the University shall at all times have clinical instruction provided for them at the Queen's Hospital, Birmingham, this provision being identical with one included in the scheme set forth in the Schedule to the Queen's College Birmingham Act, 1867.

By a subsequent Clause it is provided that the Charitable Trusts Acts, 1853 to 1894, shall not extend to the University or any College or Hall therein, and the University and any such College or Hall shall be exempt from the control or jurisdiction of the Charity Commissioners.

The power of the College to appoint a member of the Governing Body of any educational or charitable institution is transferred to the University, and the exemption from rating now enjoyed by the College under the Act of 1897 is continued to the University.

By Clause 12 all professors and other members of the teaching staff of the College and all officers and servants are to hold as nearly as practicable the same offices and places in the University as they now hold in the College and upon the same terms and conditions.

Finally, in presenting their Report the Council of Mason University College desire to offer their warm congratulations to the Court of Governors of the University on the success which has attended the efforts for the promotion of a University for Birmingham. It is a special source of gratification to them to feel that at so early a date the intentions of the Founder expressed in his Supplementary Deed where he provides that at some future date his College may be affiliated to a University already established or thereafter to be established, have been so completely fulfilled. They are convinced that the special features of the University, namely, the high value attached to the technical applications of Science and the development of Commercial education, would have commended themselves to the Founder's approval as carrying out, to a degree far beyond what he was capable of, his precise intentions when he originally founded the College.

F. C. CLAYTON,

Chairman.

30th May, 1900.

University of Birmingham.

CHARTER.

Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith.

To all to whom these presents shall come, greeting :

Whereas Petitions have been presented to us by the Mason University College of Birmingham by the Mayor Aldermen and Citizens of the City of Birmingham in the County of Warwick by the School Board for the said City by the Governors of the Grammar School of King Edward VI. in the said City and by others praying Us to erect within the said City for the promotion of Arts Sciences and Learning a University and to grant a Charter with such appropriate provisions therein in that behalf as shall seem to Us meet and fit.

And whereas we have taken the said Petitions into Our Royal consideration and are minded to accede thereto.

Now therefore Know Ye that We by Virtue of Our Royal Prerogative in that behalf and all other powers enabling Us so to do of Our special grace certain knowledge and mere motion by these Presents do for Us Our Heirs and Successors grant will direct and ordain as follows :—

1.—There shall be from henceforth for ever in Our said City of Birmingham a University by the name and style of “The University of Birmingham” with Faculties of Science Arts Medicine and Commerce and such other Faculties as the Statutes of the University may from time to time prescribe.

2.—Our trusty and well-beloved Councillor Joseph Chamberlain the persons named in the Schedule hereto as members of the Court of Governors and of the Council and the Members for the time being of the Court of Governors the Council and the Senate of the University the Chancellor the Pro-Chancellor the Vice-Chancellor the Pro-Vice-Chancellor and the Principal

and Vice-Principal of the University for the time being and all others who shall pursuant to this Our Charter and the Statutes of the University for the time being be Members of the University are hereby created and from henceforth for ever shall be one body politic and corporate with perpetual succession and a Common Seal by the name and style of "The University of Birmingham" with full power and capacity by and in such name to sue and be sued and to take and hold land and to do all other lawful acts whatsoever and with full right authority power and capacity without any further or other licence by virtue of this Our Charter to take and hold such lands tenements and hereditaments as may be for the time being occupied by or on behalf of the said Corporation for the transaction of its business and the actual carrying out of its purposes and also in addition other lands tenements and hereditaments to the annual value of £50,000 according to the annual value thereof at the respective times when the same shall be respectively taken.

3.—We Our Heirs and Successors Kings and Queens of the Kingdom aforesaid shall be and remain the Visitor and Visitors of the University of Birmingham through the Lord President of Our Council for the time being.

4.—There shall be a Chancellor of the said University and one Pro-Chancellor who subject to the Statutes of the University shall act for the Chancellor pending a vacancy in that office or during the absence or inability of the Chancellor.

The first Chancellor shall be Our said trusty and well-beloved Councillor Joseph Chamberlain.

The Vice-Chancellor for the time being shall be Pro-Chancellor.

5.—There shall be a Vice-Chancellor of the said University and one Pro-Vice-Chancellor who subject to the Statutes of the University shall act for the Vice-Chancellor pending a vacancy in that Office or during the absence or inability of the Vice-Chancellor.

6.—There shall be a Principal of the University and one Vice-Principal who subject to the Statutes of the University shall act for the Principal pending a vacancy in that office or during the absence or inability of the Principal.

There shall also be a Dean of each of the Faculties within the University. The Dean of the Faculty of Medicine shall be appointed by the Council from among the Members of that Faculty. The Deans of the other Faculties shall be appointed as provided by the Statutes of the University.

The Principal shall be from time to time appointed by Us Our Heirs and Successors through the Lord President of Our Council for the time being.

The first Vice-Principal shall be Robert Samuel Heath, M.A., D.Sc., now Principal of Mason University College.

The first Dean of the Faculty of Medicine shall be Bertram Coghill Alan Windle, M.A., M.D., D.Sc., F.R.S.

7.—The Supreme Governing Body of the University shall be the Court of Governors and subject to this Charter the Statutes of the University and the Law of the Realm the Court of Governors shall have absolute power within the University.

The first Members of the Court of Governors shall be the persons nominated in the First Schedule to these presents.

Statutes of the University shall regulate the powers and business of the Court the election and continuance in office of the Members of the Court (including the continuance in office of the first Members) the filling of vacancies among the Members and all other matters relative to the Court which it may be thought are proper to be so regulated. Women shall be eligible to be Members of the Court of Governors.

The Chancellor shall be ex-officio head of the University and a Member and President of the Court of Governors.

The Pro-Chancellor shall be ex-officio a member of the Court of Governors.

8.—There shall be a Council of the University which shall subject to the Statutes of the University and the control of the Court of Governors as regulated by the said Statutes have the government and control of the finances of the University and of the discipline practical affairs business and work of the University.

The Vice-Chancellor shall be ex-officio a member and President of the Council.

The Pro-Vice-Chancellor shall be ex-officio a member of the Council.

The Principal Vice-Principal and the Deans of the Faculties shall be ex-officio members of the Council.

There shall also be one Member of the Council who shall be elected by the Faculty of Medicine of the University.

At no time shall the Members of the Council who are members of the Senate be more in number than the number of Members of the Council divided by four.

The first Members of the Council shall be the persons nominated in the First Schedule to these presents.

Statutes of the University shall regulate the performance of the duties of the Council the election and continuance in office of the Members of the Council (including the continuance in office of the first Members) the filling of vacancies among the Members and all other matters relative to the Council which it may be thought are proper to be so regulated.

9.—There shall be a Senate of the University consisting of the Principal Vice-Principal Deans of Faculties and all the Professors of the University which shall subject to Statutes of the University and the control and approval of the Council have the regulation and control of the Curriculum and Education afforded by the University and the Discipline of the Students of the University.

The Principal shall be Ex-officio President of the Senate.

Statutes of the University shall regulate and define the powers and business of the Senate and all other matters relative to the Senate which it may be thought are proper to be so regulated.

10.—The University shall be both a Teaching and an Examining University and shall further the prosecution of original research in all its branches.

The University may confer on persons of either sex Degrees Diplomas and Certificates whether Honorary Substantive or otherwise and such Degrees Diplomas and Certificates shall be conferred and held subject to any such provisions as may be made by the Statutes and Ordinances of the University with reference thereto.

No religious test of any kind whatsoever shall be applied in the University or imposed upon or observed by any Member Graduate Student or Office Holder of the University.

11.—The University may admit to affiliation with it or to any of its privileges any College or Institution or the Members or Students thereof upon such terms and conditions and subject to such regulations as may from time to time be prescribed by the Statutes of the University.

12.—The Court of Governors may from time to time make Statutes for the University which shall carry into effect this Charter and its provisions and may regulate and govern and contain prescriptions in regard to the affairs business work and interests of the University and those of the Corporate Members thereof as such and the status appointment and removal of the Members Chancellor Pro-Chancellor Vice-Chancellor Pro-Vice-Chancellor Principal Vice-Principal and Dean of the Faculty of Medicine and Officers thereof and may contain all such provisions as the Court may deem it fit and meet should be made with respect to or for the governing of the University its Constituent parts and Members or to promote the objects of these presents.

The Council shall have such power to suggest draft or propose to the Court Statutes to be made by the Court as the Statutes of the University may provide for and it shall be the duty of the Court to duly consider the same.

The first Statutes of the University shall be those Scheduled to these presents and they are hereby declared to be valid and within the powers by this Article of these presents conferred.

The Statutes may add to amend alter or repeal the Statutes from time to time in force (including the first) and the power to make Statutes shall not be limited by or with reference to the first or any subsequent Statutes or the several subject matters therein dealt with.

Any Statutes to be hereafter made which are not repugnant to the provisions of this Charter or the Laws of the Realm shall be operative and have effect when allowed by Us or by any Committee of Our Most Honourable Privy Council and not before. Such allowance shall be conclusive evidence of the Statutes so allowed being authorized by the provisions of this Charter.

13.—The Court of Governors the Council and the Senate respectively may from time to time make regulations for Governing subject to these presents and the Statutes of the University the proceedings of those bodies respectively. The power to make regulations shall include the power to add to amend alter or repeal any theretofore made.

The Council shall make the first regulations for the Court of Governors and the Council. The regulations for the Court of Governors require the approval of the said Court.

14.—It shall be the duty of the Council from time to time to bring before the Court of Governors and the Senate any matters which in its opinion should be dealt with by these bodies respectively.

15.—There shall be a Guild of Graduates of the University and a Guild of its Students each of whom

shall have such and so many Representatives on the Court of Governors as may be provided by the Statutes of the University. The constitution functions privileges and all other matters connected with the said Guilds requiring to be prescribed shall be prescribed as may be provided by the Statutes.

16.—The Court of Governors may at any time alter amend or add to these presents and their provisions by a Special Resolution in that behalf and such alteration amendment or addition shall when allowed by Us Our Heirs or Successors under the sign manual or otherwise as We or They shall deem meet become effectual so that these presents shall thenceforward continue and operate as though they had been originally granted and made as so altered amended or added to as aforesaid. This Article of these presents shall apply to this Charter as altered amended or added to in manner aforesaid. A Special Resolution means a Resolution passed and confirmed in the manner provided by the Statutes of the University.

17.—Our Royal Will and Pleasure is that these presents shall ever be construed benevolently and in every case most favourably to the University of Birmingham and the promotion of the objects of this Our Charter.

FIRST SCHEDULE.

MEMBERS OF THE COURT OF GOVERNORS.

The following persons shall be the first members of the said Court:—

Class (I.) LIFE GOVERNORS.

The Most Honourable the Marquess of Hertford, the Right Honourable the Earl of Dudley, the Right Honourable the Earl of Harrowby, the Right Honourable the Earl of Warwick, the Right Honourable the Earl of Bradford, the Right Honourable the Earl of Dartmouth, the Right Honourable the Earl of Denbigh, the Right

Honourable the Viscount Cobham, the Right Rev. John Percival (Lord Bishop of Hereford), the Right Honourable Lord Burton, the Right Honourable Lord Calthorpe, the Right Honourable Lord Leigh, the Right Honourable Lord Norton, the Right Honourable Lord Windsor, the Right Honourable Lord Wrottesley, the Right Honourable Joseph Chamberlain, the Right Honourable Sir Henry Hartley Fowler, the Right Honourable William Kenrick, Sir Henry Wiggin, Baronet. Sir John Jaffray, Baronet, Sir Benjamin Hingley, Baronet, Sir John Charles Holder, Baronet, Sir Balthazar Walter Foster, Sir Alfred Hickman, Sir John Benjamin Stone, Sir Richard Tangye, Sir Willoughby Francis Wade, James Gibbs Blake, George James Johnson, Francis Corder Clayton, George Hamilton Kenrick, Robert Francis Martineau, Edward Lawley Parker, Osmund Airy, William Ansell, Edward Ansell, William Beilby Avery, Arthur Albright, George Stacey Albright, William Arthur Albright, William Elijah Benton, Charles Gabriel Beale, Alice Beale, George Edward Belliss, Thomas Barnsley, Francis Seddon Bolton, James Booth, George Cadbury, Elsie Mary Cadbury, Helen Caddick, Andrew Carnegie, Arthur Chamberlain, Joseph Austen Chamberlain, Alexander Macomb Chance, John Homer Chance, Joseph Bennett Clarke, Gilbert Henry Claughton, William Barwick Cregoe-Colmore, William Thomas Gustavus Cook, John Corbett, Frederick Corbett, Harriet Elizabeth Gertrude Dale, Arthur Stansfeld Dixon, Charles Woolryche Dixon, James Ernest Dixon, Frederick Elkington, Thomas Stratton Fallows, John Feeney, Walter Newton Fisher, William Gibbins, Caroline Gibbins, Thomas Gladstone, Arthur Godlee, William Henry Greenwood, Felix Hadley, Charles Harding, Edith Harrold, Obed Charles Hawkes, Alfred Bradley Holinsworth, Charles Bradley Holinsworth, James Richardson Holliday, John Bernard Hardman, William Harris, Robert Heath, George Hookham, Laurence William Hodson, Walter Loveridge Hodgkinson, Charles Holcroft, William Holcroft, Thomas Vincent Jackson, Frank James, Joseph James, George Hope Johnstone, William Jones, John Arthur Kenrick, Mary Kenrick,

Arthur Keen, Rachel Anna King, Ethel Mary Knox, Thomas Grosvenor Lee, Henry Lea, George Braithwaite Lloyd, John Henry Lloyd, John Pearce Lacy, John Walford Lea, Edward Bindon Marten, Frank McClean, Alfred Morcom, Henry Mitchell, John Manley, Charles Edward Mathews, John Throgmorton Middlemore, George Henry Morley, Edward Nettlefold, Abraham Follett Osler, Alfred Clarkson Osler, Henry Follett Osler, Thomas Parker, Ebenezer Parkes, Charles Andrew Palmer, Richard Peyton, John Phillips, Richard Alfred Pinsent, Hume Chancellor Pinsent, Maurice Pollack, Alfred Henry Poultney, Edwin Rickards, Charles Showell, Howard Samuel Smith, Martyn Josiah Smith, Edward James Smith, William Charles Alston Smith-Ryland, Alexander William Still, Lilian Landon Thomas, Thomas William Thursfield, William Augustus Tilden, George Tangye, Michael Tomkinson, Thomas Turner, Isabel Mary Vardy, John Clough Vaudrey, Thomas Ferdinand Walker, John William Bund Willis-Bund, John Edward Wilson, Joseph Henry Wilkinson, Georgina Tarleton Young, Hugo Joseph Young.

Class (2) Five persons appointed by the Municipal Council of the City of Birmingham.

SIR JAMES SMITH.
 MAURICE POLLACK.
 WILLIAM THOMAS GUSTAVUS COOK.
 JOHN HENRY LLOYD.
 ALFRED JOHN REYNOLDS.

Class (3) One member for each of the County Councils of Warwickshire Worcestershire Staffordshire Shropshire Leicestershire Derbyshire Rutlandshire to be appointed by the respective County Councils and one member for the Council of every County Borough (other than the City of Birmingham) in the said Counties and for the Council of the Borough of Kidderminster to be appointed by the respective Councils and one member for the School Board of every School Board for a County Borough (other than Birmingham) in the said Counties.

		<i>Appointed by</i>
The Rev. WILLIAM MACGREGOR...		The County Council of Warwickshire.
GEORGE WILLIAM GROSVENOR ...		The County Council of Worcestershire.
FRANCIS ELLIOTT KITCHENER ...		The County Council of Staffordshire.
JAMES PATCHETT		The County Council of Shropshire.
BENJAMIN HURST		The County Council of Leicestershire.
GEORGE HERBERT STRUTT ...		The County Council of Derbyshire.
The Right Hon. the Earl of		
GAINSBOROUGH		The County Council of Rutlandshire.
ALBERT SAMUEL TOMSON ...		The Council of the City of Coventry.
ALBERT BUCK		The Council of the City of Worcester.
CHARLES HAYNES		The Council of the Borough of Dudley.
EDWARD THOMAS HOLDEN ...		The Council of the Borough of Walsall.
CHARLES AKRILL		The Council of the Borough of West Bromwich.
THOMAS HAMPTON... ..		The Council of the Borough of Hanley.
SAMUEL THEODORE MANDER ...		The Council of the Borough of Wolverhampton.
EDWARD WOOD		The Council of the Borough of Leicester.
JOHN EYRE RUSSELL		The Council of the Borough of Derby.
EDWARD PARRY		The Council of the Borough of Kidderminster.
FREDERICK BIRD		The School Board of the City of Coventry.
ALBERT WEBB		The School Board of the City of Worcester.
GEORGE HENRY DUNN		The School Board of the Borough of Dudley.
The Rev. GEORGE BARRANS ...		The School Board of the Borough of Walsall.

<i>Appointed by</i>		
The Rev. JOHN WATKISS JONES ...	The School Board of	the Borough of West Bromwich.
THOMAS WILLIAM HARRISON ...	The School Board of	the Borough of Hanley.
ALEXANDER HUNTER ...	The School Board of the Borough of	Wolverhampton.
ALEXANDER BAINES ...	The School Board of the Borough of	Leicester.
WILLIAM BEMROSE ...	The School Board of the Borough of	Derby.

Class (4) One person appointed by the Birmingham School Board.

The Rev. JOSEPH WOOD.

Class (5) One person appointed by the Lord President of Her Majesty's Privy Council.

WILLIAM AUGUSTUS TILDEN.

One each by the Chancellors for the time being of the Universities of Oxford Cambridge London Wales the Victoria University and the University of Birmingham.

<i>Appointed by</i>		
EDWARD BAGNALL POULTON ...	The Chancellor of the	University of Oxford.
WILLIAM NAPIER SHAW ...	The Chancellor of the	University of Cambridge.
JOSEPH LARMOR... ...	The Chancellor of the	University of London.
The Right Hon. Lord RENDEL...	The Chancellor of the	University of Wales.
NATHAN BODINGTON ...	The Chancellor of the	Victoria University.
(To be appointed)... ...	The Chancellor of the	University of Birmingham.

One by the Warden of Durham University.

FRANK BYRON JEVONS.

One by the Royal College of Physicians of London.

CHARLES THEODORE WILLIAMS.

One by the Council of the Royal College of Surgeons of England.

SIR WILLIAM MACCORMAC, Baronet.

Class (6) Ten of the Members of Parliament elected for the Boroughs Counties and Divisions of Counties or Boroughs in the said seven Counties.

The Right Hon. JESSE COLLINGS, M.P.

VICTOR MILWARD, M.P.

RICHARD BIDDULPH MARTIN, M.P.

JOHN WILLIAM WILSON, M.P.

WILLIAM WOODALL, M.P.

SIR HENRY HOWE BEMROSE, M.P.

VICTOR C. W. CAVENDISH, M.P.

ALEXANDER HARGREAVES BROWN, M.P.

LORD EDWARD MANNERS, M.P.

ALFRED BALDWIN, M.P.

Class (7) Governors ex-officio.

The Lord Mayor of Birmingham (CHARLES GABRIEL BEALE).

The Right Rev. JOHN JAMES STEWART PEROWNE, D.D.,
Lord Bishop of Worcester.

The Right Rev. The Hon. AUGUSTUS LEGGE, D.D.,
Lord Bishop of Lichfield.

The Right Rev. EDWARD ARBUTHNOT KNOX, D.D.,
Suffragan-Bishop of Coventry.

The Right Rev. EDWARD ILSLEY, D.D., Roman
Catholic Bishop of Birmingham.

The Chairman of the Guardians of the Poor of the Parish of Birmingham.

STEPHEN GATELEY.

The Chairman of the Birmingham School Board.

The Rev. EGERTON FRANCIS MEAD MACCARTHY.

The Bailiff of the Governors of the Foundation of King Edward VI. Birmingham.

ROBERT SAMUEL HEATH.

The Senior Vice-President of the Birmingham and Midland Institute.

HUME CHANCELLOR PINSENT.

The Head Master of the High School on the Foundation of King Edward VI. Birmingham.

The Rev. ALBERT RICHARD VARDY.

The Head Masters of Rugby Repton Shrewsbury
Uppingham and Malvern.

The Rev. HERBERT ARMITAGE JAMES ... Rugby.
The Rev. WILLIAM MORDAUNT FURNEAUX Repton.
The Rev. H. WHITEHEAD MOSS ... Shrewsbury.
The Rev. EDWARD CARUS SELWYN ... Uppingham.
The Rev. SYDNEY RHODES JAMES ... Malvern.

The Head Masters of the Grammar Schools on the
Foundation of King Edward VI. Birmingham.

The Rev. EGERTON FRANCIS MEAD MACCARTHY.
The Rev. ARTHUR JAMSON SMITH.
ERNEST WILLIAM FLOYD.

The Head Mistress of the High School for Girls on
the Foundation of King Edward VI. Birmingham.

EDITH ELIZABETH MARIE CREAK.

The Head Master of the Birmingham Municipal
School of Art.

EDWARD RICHARD TAYLOR.

The Principal of the Birmingham Municipal
Technical School.

WILLIAM EDWARD SUMPNER.

The President of the Birmingham and Midland
Counties Branch of the British Medical Association.

BENNETT MAY.

The President of the Central Counties Branch of
the British Dental Association.

JOHN THOMAS CRAIG.

The President of the Birmingham Clinical Board.

THOMAS FREDERICK CHAVASSE.

The President of the Birmingham Law Society.

JOSEPH ANSELL.

The Chairman of the Committee of the General
Hospital Birmingham.

JOSEPH HICKMAN PEARSON.

The Chairman of the Committee of the Queen's
Hospital Birmingham.

HENRY GLAISYER.

The Vice-Principal.

ROBERT SAMUEL HEATH.

The Dean of the Medical Faculty.

BERTRAM COGHILL ALAN WINDLE.

Class (15) One member appointed by each of the following eleven Associations of Voluntary Elementary Schools viz.:—

*Church of England Associations.**Diocese of Worcester (comprising the Counties of Worcester and Warwick).*

- (a) The Church Schools Association for the Diocese of Worcester.

The Right Rev. JOHN JAMES STEWART PEROWNE, D.D.,
Lord Bishop of Worcester.

- (b) The Church Schools Sub-Association for the Archdeaconry of Worcester.

The Ven. WILLIAM WALTERS, Archdeacon of Worcester.

- (c) The Church Schools Sub-Association for the Archdeaconry of Coventry.

The Ven. WILLIAM BREE, D.D., Archdeacon of
Coventry.

- (d) The Church Schools Sub-Associations for the Archdeaconry of Birmingham.

The Right Rev. EDMUND ARBUTHNOT KNOX, D.D.,
Bishop-Suffragan of Coventry.

Diocese of Lichfield.

The Church Schools Associations for the Diocese of Lichfield as under :

- (e) The Staffordshire Voluntary Schools Association and its two divisions.

The Right Rev. the Hon. AUGUSTUS LEGGE, D.D., Lord
Bishop of Lichfield.

- (f) The North Staffordshire Sub-Association.

The Rev. CHARLES HARE SIMPKINSON.

- (g) The South Staffordshire Sub-Association.

ISAAC EDWARD EVERETT.

- (h) The North Salop Voluntary Schools Association.

The Rev. THOMAS AUDEN.

Roman Catholic Association.

- (i) Birmingham Diocesan Catholic Schools Association. (Comprising the Counties of Worcester Warwick Stafford and Oxford.)

JAMES JOHN PARFITT.

- (j) Midland Association of Wesleyan Day Schools. (Comprising the Counties of Leicester Stafford Warwick Worcester and parts of Cheshire Derby Lincoln (Kesteven) Notts Salop and York (W.R.).

WILLIAM PARKIN.

- (k) The Midland Counties Association of British and other Voluntary Schools. (Comprising the Counties of Derby Leicester Notts Salop Warwick and parts of Staffordshire and Worcestershire.)

ALFRED WILLIAM WORTHINGTON.

MEMBERS OF THE COUNCIL.

The following persons shall be the first members of the said Council :—

Class (1)—

The Rt. Hon. JOSEPH CHAMBERLAIN.. Chancellor.

(To be elected)

	}	Vice-Chancellor.
		Pro-Vice-Chancellor.
		Treasurer.
		Principal.

ROBERT SAMUEL HEATH ... Vice-Principal.

BERTRAM COGHILL ALAN WINDLE ... Dean of the Faculty of Medicine.

Class (2)—

The Right Hon. LORD WINDSOR.

Sir JOHN CHARLES HOLDER, Baronet.

JAMES GIBBS BLAKE.

FRANCIS CORDER CLAYTON.

GEORGE WILLIAM GROSVENOR.

GEORGE JAMES JOHNSON.

GEORGE HAMILTON KENRICK.

FRANCIS ELLIOTT KITCHENER.

The Rev. WILLIAM MACGREGOR.

SAMUEL THEODORE MANDER.

ROBERT FRANCIS MARTINEAU.

HUME CHANCELLOR PINSENT.

EDWIN RICKARDS.

CHARLES SHOWELL.

Class (3)—

SIR JAMES SMITH.

MAURICE POLLACK.

WILLIAM THOMAS GUSTAVUS COOK.

JOHN HENRY LLOYD.

ALFRED JOHN REYNOLDS.

Class (4)—To be appointed.

Class (5)—To be appointed.

SECOND SCHEDULE.

STATUTES OF THE UNIVERSITY.

SECTION I.

PRELIMINARY.

In these Statutes:—

“University” means the University of Birmingham.

“Court” means the Court of Governors of the University.

“Council” means the Council of the University.

“Senate” means the Senate of the University.

“Faculty” means a Faculty of the University.

“Chancellor” “Pro-Chancellor” “Vice-Chancellor” “Pro-Vice-Chancellor” “Principal” “Vice-Principal” and “Deans of the Faculties” mean respectively the Chancellor Pro-Chancellor Vice-Chancellor Pro-Vice-Chancellor Principal Vice-Principal and Deans of the Faculties of the University.

“Statutes” means the Statutes of the University.

“Ordinance” means Ordinance made pursuant to the Statutes.

“Regulation” means Regulation made pursuant to the Charter or Statutes.

“Graduate” means Graduate of the University.

“Under-graduate” means Under-graduate Student of the University.

“Professor” means Professor appointed to be such in the University.

- “Treasurer” means Treasurer of the University.
“Secretary” means Secretary of the University.
“Registrar” means Registrar of the University.
“Financial year” means the yearly period for which the accounts and financial affairs of the University are for the time being made up arranged and calculated.
“Auditor” means Auditor of the University Accounts.
“Good cause” when used in reference to removal from office membership or place means (1) misbehaviour in office (2) being a lunatic (3) conviction of any felony (4) conviction of any misdemeanour which shall be judged by the authority invested with the power of removal to be of an immoral scandalous or disgraceful nature (5) actual incapacity in or for the execution of the duties of the office membership or place or (6) any misbehaviour of an immoral scandalous or disgraceful nature rendering the holder of the office membership or place unfit in the opinion of the authority invested with the power of removal to continue such holder.

SECTION 2.

THE CHANCELLOR.

- 1.—The Chancellor shall be elected by the Court but his election must to be effective be approved by the Crown.
 - 2.—The Chancellor shall hold office during good behaviour.
 - 3.—The Chancellor may be removed for good cause by the Visitor at the instance of the Court.
 - 4.—The Chancellor may resign by writing addressed to the Court and signed by him.
 - 5.—The above provisions so far as applicable apply to the First Chancellor.
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SECTION 3.

THE VICE-CHANCELLOR AND PRO-VICE-CHANCELLOR.

1.—The Vice-Chancellor and Pro-Vice-Chancellor shall be elected by the Court but if the Chancellor shall object to the election of any person and show cause for his objection to the Visitor the Visitor may in his discretion annul the election.

2.—The said Officers shall hold office during good behaviour.

3.—Either of the said Officers may be removed for good cause by the Visitor at the instance of the Court.

4.—The said Officers may respectively resign by writing signed by them addressed to the Chancellor.

5.—The above provisions so far as applicable shall apply to the First Vice-Chancellor and Pro-Vice-Chancellor.

SECTION 4.

PRINCIPAL

1.—The Principal shall be appointed by the Crown.

2.—The Principal shall hold office during good behaviour.

3.—The Principal may be removed for good cause by the Visitor at the instance of the Court.

4.—The Principal may resign by writing addressed to the Court and signed by him.

SECTION 5.

VICE-PRINCIPAL AND DEAN OF THE FACULTY OF
MEDICINE.

1.—The Vice-Principal and Dean of the Faculty of Medicine shall be appointed by the Council.

2.—The Vice-Principal and the said Dean shall hold office during good behaviour.

3.—The said Officers may be removed by the Council for good cause provided that such removal shall only be carried by a Resolution of the Council passed at a meeting at which not less than an absolute majority of the whole Council are present and vote and carried at such meeting by the vote of two-thirds of those present.

4.—The said Officers may respectively resign their offices by writing signed by them and addressed to the Vice-Chancellor.

5.—The above provisions so far as applicable shall apply to the First Vice-Principal and Dean of the Faculty of Medicine.

SECTION 6.

THE TREASURER.

1.—The Treasurer shall be appointed by the Court and shall be ex-officio a member of the Court.

2.—The Treasurer's term of office shall be five years from appointment and subject thereto during good behaviour.

3.—The Treasurer shall furnish such security as the Council think fit to require but it shall not be obligatory on the Council to demand security from the Treasurer.

4.—The Treasurer shall be removable from office for good cause by the Council.

5.—The Treasurer may resign by writing under his hand addressed to the Vice-Chancellor.

SECTION 7.

THE SECRETARY.

The Council shall from time to time appoint a Secretary of the University for such term and at such remuneration as it shall deem fit who may be suspended or dismissed by the Council in its discretion.

SECTION 8.

THE REGISTRAR.

The Council shall from time to time appoint a Registrar of the University for such term and at such remuneration as it shall deem fit who may be suspended or dismissed by the Council in its discretion.

SECTION 9.

AUDITOR.

1.—The Court shall from time to time appoint an Auditor who shall not nor shall any member of his firm be a member of any of the University Governing Bodies but shall be a member of the Institute of Chartered Accountants of England and Wales in the active practice of his profession.

2.—The Auditor's term of office shall be three years subject to good behaviour.

3.—The Auditor may be removed for good cause by the Court.

4.—The Auditor shall receive such remuneration as may be agreed to by the Council.

5.—The Auditor shall give such certificates as the Regulations prescribe.

6.—The Auditor may resign in writing addressed to the Council.

7.—Acceptance of office by an Auditor shall be deemed to carry with it an undertaking by the Auditor to the University that every certificate given by him or passing of accounts by him implies that he satisfied himself by full and careful investigation (made by himself or agents for whom he undertakes to be responsible) by every reasonable means within his power or reach and after the exercise of due professional skill that the statements in the certificate are true and accurate and that any accounts certified or passed are complete true and accurate.

SECTION 10.

MEMBERS OF THE UNIVERSITY.

The following persons shall be Members of the University :

Class A—

Members of the Court.

Members of the Council.

Members of the Senate.

Class B—

The officers of the University hereinbefore mentioned other than the Auditor.

Class C—

Such Members of the Teaching Staff of the University as shall under Ordinances or Regulations made by the Council enjoy the status of members.

Class D—Graduates.

Class E—Undergraduates.

Membership of the University shall continue so long only as the qualifications above enumerated continue to be possessed by the individual member and expiration of the term of office removal from or resignation of office or withdrawal or resignation of the qualification (as the case may be) shall terminate the individual's membership of the University.

SECTION 11.

THE COURT.

1.—The following shall be Members of the Court :

Class (1) The Life Governors who are nominated in the First Schedule to these Presents and their successors.

Class (2) Five persons to be appointed by the Municipal Council of the City of Birmingham.

Class (3) One member for each of the County Councils of Warwickshire Worcestershire Staffordshire Shropshire Leicestershire Derbyshire Rutlandshire to be

appointed by the respective County Councils and one member for the Council of every County Borough (other than the City of Birmingham) in the said Counties and for the Council of the Borough of Kidderminster to be appointed by the respective Councils and one member for the School Board of every School Board for a County Borough (other than Birmingham) in the said Counties and one member for such other Counties Municipal Boroughs or School Boards as the Court by resolution prescribe.

Class (4) One person to be appointed by the Birmingham School Board.

Class (5) Persons appointed as follows—

One by the Lord President for the time being of Her Majesty's Privy Council.

One each by the Chancellors for the time being of the Universities of Oxford Cambridge London Wales the Victoria University and the University of Birmingham.

One by the Warden of Durham University.

One by the Royal College of Physicians of London.

One by the Council of the Royal College of Surgeons of England.

Class (6) Ten of the Members of Parliament elected for the Boroughs Counties and Divisions of Counties or Boroughs in the said seven Counties to be nominated by the Court.

Class (7) The following officials shall be members of the Court ex-officio—

The Lord Mayor of Birmingham.

The Lords Bishops of Worcester and Lichfield the Bishop of Coventry and the Roman Catholic Bishop of Birmingham.

The Chairman of the Guardians of the Poor of the Parish of Birmingham.

The Chairman of the Birmingham School Board.

The Bailiff of the Governors of the Foundation of King Edward VI. Birmingham.

The Senior Vice-President of the Birmingham and Midland Institute.

The Head Master of the High School on the Foundation of King Edward VI. Birmingham.

The Head Masters of Rugby Repton Shrewsbury Uppingham and Malvern.

The Head Masters of the Grammar Schools on the Foundation of King Edward VI. Birmingham.

The Head Mistress of the High School for Girls on the Foundation of King Edward VI. Birmingham.

The Head Master of the Birmingham Municipal School of Art.

The Principal of the Birmingham Municipal Technical School.

The President of the Birmingham and Midland Counties Branch of the British Medical Association.

The President of the Central Counties Branch of the British Dental Association.

The President of the Birmingham Clinical Board.

The President of the Birmingham Law Society.

The Chairman of the Committee of the General Hospital Birmingham.

The Chairman of the Committee of the Queen's Hospital Birmingham.

The Principal and Vice-Principal.

The Deans of the Faculties.

The Professors of the University.

The Honorary Secretary of the Dental Department of the University.

Class (8) Six persons elected by the Guild of Graduates.

Class (9) Three persons elected by the Guild of Undergraduates.

Class (10) Every donor to the funds of the University to the amount or value of £1,000 or upwards whether by one or more donations or by instalments shall be a member for life.

Class (11) Every such donor as in Class (10) referred to making the donation by testament shall be entitled to appoint by testament or by will to authorise his personal representatives on one occasion to appoint some person to be a life member.

Class (12) Any Corporation Local Authority Company Association or Partnership making such a donation as in Class (10) mentioned shall be entitled on one occasion to appoint one person to be a life member.

Class (13) Such representatives of affiliated colleges as may be appointed under Section 20 of these Statutes.

Class (14) Such other persons not exceeding 20 in number as may be elected by the Court who shall be members for such periods as the Court at the time of election appoints.

Class (15) One member to be appointed by each of the following eleven Associations of Voluntary Elementary Schools viz. :—

Church of England Associations.

Diocese of Worcester (comprising the Counties of Worcester and Warwick).

- (a) The Church Schools Association for the Diocese of Worcester.
- (b) The Church Schools Sub-Association for the Archdeaconry of Worcester.
- (c) The Church Schools Sub-Association for the Archdeaconry of Coventry.
- (d) The Church Schools Sub-Associations for the Archdeaconry of Birmingham.

Diocese of Lichfield.

The Church Schools Associations for the Diocese of Lichfield as under—

- (e) The Staffordshire Voluntary Schools Association and its two divisions.

- (f) The North Staffordshire Sub-Association.
- (g) The South Staffordshire Sub-Association.
- (h) The North Salop Voluntary Schools Association.

Roman Catholic Association.

- (i) Birmingham Diocesan Catholic Schools Association. (Comprising the Counties of Worcester Warwick Stafford and Oxford.)

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- (j) Midland Association of Wesleyan Day Schools. (Comprising the Counties of Leicester Stafford Warwick Worcester and parts of Cheshire Derby Lincoln (Kesteven) Notts Salop and York (W.R.)
 - (k) The Midland Counties Association of British and other Voluntary Schools. (Comprising the Counties of Derby Leicester Notts Salop Warwick and parts of Staffordshire and Worcester-shire.)

2.—Any vacancy occurring in the number of Life Governors in Class (1) may be filled up by the election by the Court of Governors of some fit person to be a Life Governor of the University.

3.—All casual vacancies shall be filled up as soon as conveniently possible by the person or body which appointed the member whose place has become vacant and the appointee to a casual vacancy shall be a member for the residue of the term for which the person in whose place he is appointed was member.

4.—The members in Class (2) shall hold office for five years and one is to vacate office in every year on the 1st day of December. The first vacation to be in the year 1901. The Municipal Council shall as soon as may be after the date of these presents determine the order in which their first appointees shall retire and vacancies by retirement shall be filled at such times and in such manner as the said Council directs.

5.—The members in each of Classes (3) (4) (5) (8) (9) (13) and (15) shall hold office for three years dating from January 1st in every year and vacancies by retirement shall be filled at such time and in such manner as the appointors respectively think fit. The first members shall act as such as from the date of these presents but shall reckon their term of office as from January 1st 1900.

6.—The members in Class (6) shall continue members so long as they continue Members of Parliament and no longer. Vacancies shall be filled as they occur and as soon thereafter as conveniently may be.

7.—Members retiring by effluxion of time may be re-elected.

8.—Members (other than ex-officio members) may be removed for good cause by the Court.

9.—Members need not be members of the bodies by which they are appointed.

10.—Women may be members of the Court.

11.—Where members of the Court comprised within any of the classes aforesaid have not been nominated in the First Schedule to the Charter such members shall be appointed in accordance with this section as soon as may be after the date of the Charter.

SECTION 12.

THE COUNCIL.

1.—The Council shall consist of the following members, viz. :—

Class (1) The Chancellor the Vice-Chancellor Pro-Vice-Chancellor Treasurer Principal Vice-Principal and Dean of the Faculty of Medicine.

Class (2) At least twelve members of the Court appointed by the Court.

Class (3) The five persons appointed by the Birmingham City Council to be members of the Court.

Class (4) The Deans of the Faculties other than the Faculty of Medicine.

Class (5) A representative of the Faculty of Medicine elected by the members of that Faculty.

2.—Class (2) shall hold office for four years and Classes (4) and (5) for three years. The term shall in the case of the first appointment be reckoned as from the date of the Charter and in case of any subsequent appointment from the date of such appointment or re-appointment as the case may be.

3.—Of Class (2) one-fourth or the number nearest to one-fourth shall retire every year. The Court shall determine the order in which the first members of Class (2) shall retire. Every retiring member of this class shall continue to act until his successor is appointed.

4.—All casual vacancies shall be filled up as soon as conveniently may be by the body which appointed the member whose place has become vacant and the appointee to a casual vacancy shall be a member for the residue of the term for which the person in whose place he is a member was appointed.

5.—Except as expressly above provided appointees need not be members of the body by which they are appointed.

6.—Members retiring by effluxion of time may be re-elected.

7.—Members (others than ex-officio members) may be removed for good cause by the Court.

8.—In case any member of the Council comprised within any of the above classes has not been nominated in the First Schedule to the Charter he shall be appointed in accordance with this Section as soon as possible.

9.—Class (2) aforesaid shall be increased by three members for every member of the Senate also member of the Council who brings up the number of members of the Senate who are members of Council to a number

exceeding the proportion provided by the Charter. Such additional members shall be elected as soon as possible after the cause of election arises.

SECTION 13.

THE SENATE.

1.—The Senate shall consist of the Principal Vice-Principal the Deans of all the Faculties and all the Professors of the University for the time being.

SECTION 14.

ORDINANCES.

1.—The Council shall make Ordinances with regard to such matters as are directed by the Statutes.

2.—Ordinances shall be effective and binding when sanctioned by the Court except that in cases certified to be urgent by a vote to that effect of not less than an absolute majority of the Council Temporary Ordinances may be made and shall be operative from a date prescribed by the Council until the then next meeting of the Court at which the Ordinance can be considered.

3.—Ordinances shall subject to the Charter and Statutes deal with the following matters :—

- (a) The finances investments and accounts of the University.
- (b) The constitution functions and privileges of the Guilds of Graduates and Under-Graduates and other matters connected with the said Guilds requiring to be prescribed.
- (c) The Degrees Diplomas Certificates and distinctions (honorary and substantive) to be awarded by the University the qualifications for the same inclusive of examinations and the means and steps to be taken relative to the granting and obtaining of the same.

- (*d*) Prescriptions regarding the discipline to be enforced in regard to the Graduates and Under-Graduates.
 - (*e*) The withdrawal of Degrees Diplomas Certificates and Distinctions.
 - (*f*) The removal from Membership of the University of Graduates and Under-Graduates.
 - (*g*) Such subjects as are required by the Statutes to be prescribed by means of Ordinances.
 - (*h*) The inspection and examination of Schools and other Institutions and the Scholars and Students therein and the grant of Certificates of Proficiency.
 - (*i*) The provisions and tenure of such Fellowships Scholarships Exhibitions prizes rewards and pecuniary and other aids as are referred to in Section 16 of the Statutes.
 - (*k*) The payment and amount of fees to be exacted within the University or in relation to the enjoyment of privileges therefrom.
 - (*l*) The emoluments allowances salaries and superannuation allowances of the Officers of the University its Professors Lecturers Teaching Staff Secretary Registrar and permanent servants.
 - (*m*) The provision employment tenure of office and terms and manner of appointment and the duties of and teaching by Professors Lecturers and Teaching Staff.
 - (*n*) The conditions of affiliation of Colleges.
 - (*o*) The provision maintenance and supervision of Halls or other premises for the residence of students.
 - (*p*) The duties and powers of Faculties and Advisory Boards.
 - (*q*) The tenure of office and terms and manner of appointment and the duties of the Examiners Examining Boards Secretary Registrar Librarian and permanent Servants.
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SECTION 15.

FACULTIES.

1.—There shall be within the University the Faculties following :—

- (1) Science.
- (2) Arts.
- (3) Medicine
- (4) Commerce.
- (5) Such others as may be added by Statute.

2.—Ordinances shall prescribe which professors and teachers shall be members of or be attached to the several Faculties. The Principal and Vice-Principal shall be members of all Faculties. Ordinances shall also provide for the subjects which are to be within the cognizance of the respective Faculties.

3.—In the Faculties other than that of Medicine the respective Deans shall be appointed by the Members of the Faculty and shall hold office for three years.

4.—In each Faculty the Dean shall preside over the Meetings of his Faculty.

5.—The Deans other than the Dean of the Faculty of Medicine shall be removable for good cause by the Faculty appointing them respectively with the sanction of the Council.

SECTION 16.

TEACHING.

The University shall so far as and to the full extent which its resources from time to time permit provide for :—

- (a) Instruction and teaching in every Faculty.
- (b) Such instruction in all branches of liberal education as may enable students to become proficient in and qualify for degrees diplomas and certificates in science commerce arts literature law medicine surgery and all other branches of knowledge.

- (c) Such instruction especially whether theoretical technical artistic or otherwise as may be of service to persons engaged or about to engage in the manufactures commerce and industrial pursuits of the Midland Districts of England.
 - (d) Facilities for the prosecution of original research in science literature arts medicine surgery law and especially the applications of science.
 - (e) Such fellowships scholarships exhibitions prizes and rewards and pecuniary and other aids as shall facilitate or encourage proficiency in the subjects taught in the University and also original research in every branch.
 - (f) Such extra-collegiate and extra-university instruction and teaching as may be sanctioned by ordinances.
-

SECTION 17.

UNIVERSITY EXAMINATIONS.

1.—Except in the case of subjects not taught in the University the Examiners of the University shall be the Professors of the University with such Lecturers of the University as the Council from time to time appoint and such External Examiners not being Professors Lecturers or Teachers in the University as may be from time to time appointed by the Council. Provided that at least one such External Examiner shall be appointed by the Council for each subject or group of subjects forming part of the courses of studies required for University degrees.

2.—All matters respecting the subjects time and mode of the Examinations, and respecting the degrees and distinctions to be conferred by the University shall be provided for by Ordinance. Provided always that all Examinations of members of the University shall be conducted jointly by External Examiners and by Examiners being Professors or Lecturers of the University.

SECTION 18.

COMMITTEES.

1.—The Court Council and Senate may respectively appoint such and so many standing and special Committees as may seem to them fit for the purpose of dealing with any subjects or matters delegated to such Committees. The Committees' powers shall be such as the bodies appointing them from time to time direct and may be revoked altered or enlarged as to the appointing bodies shall seem meet. Every Committee shall report to the body appointing it but to the extent to which that body from time to time directs the proceedings and acts of Committees shall not require the approval of the appointing body.

2.—The Council shall make regulations for the proceedings of all Committees but subject thereto every Committee may regulate its own procedure times and places of meeting.

3.—The Vice-Chancellor shall ex-officio be a member of every Committee of the Court and Council and every joint Committee of the Court and Council.

SECTION 19.

ADVISORY BOARDS.

The Council may from time to time appoint Advisory Boards consisting either wholly or partly of members unconnected with the University upon such terms and for such purposes as the Council may consider advisable and may refer to them for advice and report any subject or matter in the Council's opinion requiring to be so dealt with. And such advice and report shall be duly considered and weighed by any body in the University to which the Council direct such advice to be given or report to be made.

SECTION 20.

AFFILIATION.

1.—The University shall have power to affiliate Colleges which may have attained a standard which shall be deemed satisfactory by the University to require contributions for University purposes from such Colleges as a condition of affiliation or otherwise and to make ordinances for regulating their relations to the University and in particular for regulating the number of the representatives of such Colleges on the University Court.

2.—The University may recognise attendance upon courses of study in an affiliated College as wholly or in part qualifying students for graduation. Provided that the recognition of lecturers teachers and examiners the regulations respecting the period of attendance upon and the character and subjects of such courses and the period of attendance at such College and the period of collegiate study for which exemption is to be granted shall be approved by the Council and provided also that the Council shall not approve thereof unless the Senate have recommended the same or unless and until the Senate shall have had a reasonable opportunity of considering and reporting thereupon to the Council.

3.—Notwithstanding that a subject is not taught in the University the Court shall have power to recognise a College in which such subject is taught and to recognise such subject as a subject for degrees in the University. Provided that pursuance of a scheme of study in that subject approved by the Council be a condition precedent to examination in that subject.

SECTION 21.

MEETINGS OF THE COURT.

1.—A meeting hereinafter distinguished as the “yearly meeting” of the Court shall be held once a year in the month of January or February at such day and hour as shall be appointed by the Council with the approval of the Chancellor and at such yearly meeting a Report of

the Proceedings of the Council and of the University together with a Statement of the Receipts and Expenditure and the Balance Sheet as audited shall be presented by the Council to such meeting.

2.—For the purposes of transacting the business in the preceding clause mentioned a quorum of the Court shall be twenty members.

3.—All other business at the yearly meeting shall be deemed special business and for the purpose of any such special business and also for the purposes of all special general meetings the quorum shall be eighty members.

4.—In the absence of a quorum no business but the adjournment of the Court can be transacted.

5.—Special general meetings may be convened by the Council at any time.

6.—Twenty-one days' notice of the yearly meeting shall be sent by the Secretary to every member of the Court.

7.—Members intending to bring forward any special business at the yearly meeting shall give notice of such business to the Secretary at least fourteen days before the day appointed for such meeting and at least seven days notice of all special business to be brought forward at the yearly meeting shall be sent to every member of the Court.

8.—Twenty-one days' notice of any special general meeting stating generally the nature of the business to be transacted shall be sent to each member of the Court and no meeting shall be competent to transact any other business than that mentioned in the notice or directly arising thereout. Provided always that this clause shall not interfere with the operation of clause 7 of this section.

9.—The procedure at meetings of the Court shall be in accordance with the regulations made for governing the same as provided by the Charter.

SECTION 22.

POWERS OF THE COURT.

1.—The Court shall exercise all the powers and authority of the University except to the extent to which the exercise of the same may by the Charter Statutes and Ordinances be otherwise provided for.

2.—To make Statutes either at its own initiative or on the proposal of the Council.

3.—All Statutes must be passed at one meeting of the Court and confirmed at the next and special notice of the fact that Statutes will be considered and containing a short statement of the nature of the proposed Statutes must have been given with respect to each of the two meetings aforesaid.

4.—A Special Resolution of the Court means a resolution passed at one meeting of the Court and confirmed at a subsequent meeting held not less than one calendar month nor more than three calendar months after the former provided the resolution be passed at each meeting by a majority of not less than two-thirds of those present and voting.

5.—The Court shall exercise control over the Senate through the Council and not otherwise and over the Council by means of Statutes and of Resolutions passed in plenary sittings of the Court and not otherwise.

SECTION 23.

ACTS DURING VACANCIES.

1.—No act or resolution of the Court the Council or the Senate shall be invalid by reason only of any vacancy in the body doing or passing it or by reason of any want of qualification by or invalidity in the election or appointment of any de facto member of the body (whether present or absent).

SECTION 24.

POWERS OF THE COUNCIL.

1.—Subject to the Charter and the Statutes and any Ordinances and Regulations made in pursuance thereof the Council shall have the following Powers :—

1. To draft statutes as and when they see fit and submit the same to the Court for consideration and enactment.
2. To make ordinances for any matters in respect of which ordinances are authorised to be made.
3. To make regulations for any purposes for which regulations are authorised to be made.
4. To exercise all such powers as are conferred on the Council by the Charter Statutes Ordinances and Regulations and carry the Charter Statutes Ordinances and Regulations into effect.
5. To review and control or disallow any act of the Senate and give directions to be obeyed by the Senate.
6. To govern manage and regulate the finances accounts investments property business and all affairs whatsoever of the University.
7. To make contracts on behalf of the University.
8. To sell buy exchange lease or take leases of the University's real and leasehold estates.
9. To provide the buildings premises furniture and apparatus and other means needed for carrying on the business of the University.
- 10.—To supervise the Instruction and Teaching of the University.
- 11.—To entertain adjudicate upon and if thought fit redress the grievances of members of the Senate on appeal against the acts of the Senate and of the Officers of the University the Professors the Teaching Staff the Graduates Under-Graduates and the University Servants who may for any reason feel aggrieved otherwise than by an Act of the Court.

12. To select a seal and arms for the University and have the sole custody and use of the seal.
 13. To borrow money on behalf of the University and for that purpose (if the Council think fit) to mortgage all or any part of the property of the University whether real or personal or give such other security whether upon such real or personal property or otherwise as the Council think fit.
- 2.—The Council shall obey and carry out the Statutes and the Resolutions of the Court.
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SECTION 25.

POWERS OF THE SENATE.

1.—The Senate shall subject to review by the Council have the government management and carrying out of the curriculum instruction and education afforded by the University the examinations held by the University recommendations for degrees diplomas certificates fellowships and scholarships and the discipline (whether intra-mural or extra-mural) of the students or undergraduates of the University and the carrying out of such discipline.

2.—Such matters as shall be committed to the Senate by the Council shall be transacted by the Senate.

SECTION 26.

Contracts made by or on behalf of the University shall be validly made and binding on the University if made as follows—

- (1) Any contract which if made between private persons would be by law required to be in writing and if made according to English law to be under seal may be made on behalf of the University in writing under its common seal and such contract may be in the same manner varied or discharged.
- (2) Any contract which if made between private persons would be by law required to be in writing and signed by the parties to be charged therewith

may be made on behalf of the University in writing signed by any person acting under the express or implied authority of the Council and such contract may in the same manner be varied or discharged.

- (3) Any contract which if made between private persons would by law be valid although made verbally only and not reduced into writing may be made either in writing or verbally on behalf of the University by any person acting under the express or implied authority of the Council and such contract may be in the same way varied or discharged.

SECTION 27.

1.—These Statutes shall be interpreted in such manner as not to conflict with the Charter.

2.—Words defined in the Charter or Statutes shall have the same meaning in the Ordinances and Regulations unless the context be repugnant thereto.

In Witness whereof We have caused these Our Letters to be made patent. **Witness** Ourself at Westminster the twenty-fourth day of March, in the sixty-third year of Our reign.

By Warrant under the Queen's Sign Manual.

MUIR MACKENZIE.



Birmingham University Act 1900.

ARRANGEMENT OF SECTIONS

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AN ACT

To Transfer all the property and liabilities of Mason University College in the City of Birmingham to the University of Birmingham, and to repeal the Mason University College Act 1897 ; to confer certain powers on the said University ; and for other purposes.

[*Royal Assent, 25th May, 1900.*]

reamble.

WHEREAS the late Sir Josiah Mason founded out of his own resources in Birmingham an institution for the promotion of thorough systematic education and instruction specially adapted to the practical mechanical and artistic requirements of the manufactures and industrial pursuits of the Midland District of England which subsequently became known as the Mason Scientific College :

And whereas the said Institution was by the Mason University College Act 1897 incorporated under the name of Mason University College with a new constitution and powers, and all the lands and other property vested in the Trustees of the said Institution were by the said Act vested in the said College :

And whereas the said Act expressly contemplated that the said College might become a member of a University to be established having power to grant degrees in arts sciences medicine and surgery :

And whereas upon the petition of the said College and of the Corporation of the City of Birmingham and of the School Board for the said City and of the

Governors of the Grammar School of King Edward the Sixth in the said City and others Her Majesty has been pleased to grant a Charter establishing in the said City of Birmingham a University by the name and style of the University of Birmingham with faculties of Science Arts Medicine and Commerce and such other faculties as the Statutes of the University may from time to time prescribe :

And whereas the said Charter directs that the University shall be both a Teaching and an Examining University, and shall further the prosecution of original research in all its branches :

And whereas the Governors of the said College are desirous and it is expedient that the College be merged in the University and that all its property and liabilities be transferred to and vested in the University and that the Mason University College Act 1897 be repealed :

And whereas the Council of the City of Birmingham and the Overseers of the Poor of the Parish of Birmingham are desirous and it is expedient that the exemption from local rates granted to the said College be continued to the said University :

And whereas it is expedient to empower the said University to hold examinations under section three of the Medical Act 1886, and to elect a representative on the General Council mentioned in section seven of the same Act :

47 & 50 Vict.
c. 48.

And whereas it is provided by a Scheme made by the Court of Chancery which is scheduled to and

confirmed by the Queen's College Birmingham Act 1867 that the physicians and surgeons of the Queen's Hospital at Birmingham shall hold their respective offices on condition of giving to all students of the Queen's College at Birmingham such clinical instruction in kind and quantity and in such manner as shall from time to time be required by the medical examining boards therein referred to and that the students of the said College shall at all times have free access to the said Hospital for the purposes of clinical instruction upon payment of such fees and on such other terms and conditions as shall be from time to time agreed and that any dispute between the said College and the said Hospital regarding such fees terms or conditions or otherwise regarding the privileges to be enjoyed by the students of the said College or any such dispute as therein mentioned between the said Hospital and any physician or surgeon thereof shall be referred to the visitor of the said College whose decision shall be binding on the parties to the dispute :

And whereas in pursuance of an Order of the Chancery Division of the High Court made by the Hon Mr. Justice Chitty at Chambers on the twenty-second day of June one thousand eight hundred and ninety-two the medical and dental departments of the said Queen's College were closed and abandoned and the anatomical and other collections books and other things specified in the said Order and formerly belonging to the said Queen's College were handed

over to and became the absolute property of the trustees of the Mason College:

And whereas the medical students of the Mason College have accordingly since the latter part of the year one thousand eight hundred and ninety-two received clinical instruction from the physicians and surgeons of the said Queen's Hospital:

And whereas it is now desirable to continue to the students in the Faculty of Medicine of the University the same rights and privileges as have been enjoyed first by the medical students of Queen's College and latterly by the medical students of Mason College under the provisions of the above-recited Scheme and Order:

And whereas it is expedient that the other provisions contained in this Act be made:

And whereas the objects of this Act cannot be attained without the authority of Parliament:

MAY IT THEREFORE PLEASE YOUR MAJESTY

That it may be Enacted and BE IT ENACTED by the Queen's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows (that is to say):—

1.—This Act may be cited as the Birmingham Short title.
University Act 1900.

2.—This Act shall come into operation on the first Commencement
of Act.
day of October one thousand nine hundred which date is hereinafter referred to as the commencement of this Act.

Dissolution of
Mason
University
College and
repeal of Act
of 1897.

3.—On the commencement of this Act Mason University College shall be dissolved, and the Mason University College Act 1897 shall be repealed, without prejudice to anything lawfully done or suffered thereunder and in particular without prejudice to the provisions of Part III. of the said Act for confirming or rendering valid certain leases sales exchanges estates interests rights payments and contracts therein referred to.

Transfer of
property to
University of
Birmingham.

4.—On the commencement of this Act all property real and personal of every description (including things in action) which immediately before the passing thereof belonged to or was vested in Mason University College shall be by virtue of this Act without any conveyance or other instrument transferred to and vested in the University of Birmingham for all the estate and interest therein of Mason University College and shall be applied to the objects and purposes for which the University is incorporated.

Appeal to
visitor with
respect to
management of
property &c.

5.—(1) Any three Governors present at a meeting of the Council of the University and voting against any resolution passed or order made at such meeting with respect to any lease sale exchange mortgage disposition or contract of or relating to any property of the University or with respect to the borrowing of money may appeal against such resolution to the visitor subject to the following conditions:—

- (A) The appeal must be made in writing signed by the appellants within seven days after the date of the meeting:

- (b) Notice of the appeal stating the grounds thereof in writing signed by one or more of the appellants must be given to the Secretary of the University within the said period of seven days.

(2) The visitor shall if desired hear the appellants and the Council and the decision of the visitor allowing disallowing or modifying the resolution or as the case may be shall be binding and final.

6.—On the commencement of this Act all debts and liabilities of Mason University College shall be by virtue of this Act transferred and attach to and be discharged and satisfied by the University of Birmingham.

Transfer of liabilities to University of Birmingham.

7.—All agreements awards contracts deeds and other instruments and all actions and proceedings and causes of action or proceedings which immediately before the commencement of this Act were existing or pending in favour of or against Mason University College shall continue and may be carried into effect enforced and prosecuted by or in favour of or against the University of Birmingham to the same extent and in like manner as if the University instead of the College had been party to or interested in the same respectively.

Saving for agreements deeds actions &c.

8.—The power or right of Mason University College to appoint or nominate a member of the Governing Body of any educational or charitable institution shall on the commencement of this Act be transferred to

Transfer of powers to nominate members of certain governing bodies.

and may be exercised by the Council of the University of Birmingham.

Power of
University of
Birmingham to
hold
examinations
under 49 & 50
Act. c. 48.

9.—The University of Birmingham is hereby empowered to hold qualifying examinations in medicine surgery and midwifery for the purpose of registration under the Medical Acts as if the University had been a university in the United Kingdom legally qualified at the passing of the Medical Act 1886 to grant diplomas in medicine and surgery; and the provisions of Part I of that Act shall be read and have effect accordingly.

Power of
University
to choose
representative
on General
Medical
Council.

10.—The Council of the University of Birmingham shall be entitled to choose one representative to be a member of the General Council constituted by the Medical Acts; and section seven of the Medical Act 1886 shall be read and have effect as if the University of Birmingham had been expressly included therein.

Exemption of
University
from rates.

11.—The University of Birmingham shall not be assessed or rated to pay or contribute to any borough improvement or parochial rates in respect of any buildings lands or property of any description occupied by the University which were exempt from rating under the Mason University College Act 1897: Provided always that the exemption herein contained shall not extend to any part of such buildings land and property which shall for the time being be occupied by any member officer or servant of the

University and the parts of buildings so occupied shall be rated as separate tenements.

12.—All professors and other members of the teaching staff of Mason University College and all officers and servants of the College shall hold as nearly as practicable the same offices and places in the University of Birmingham as they held in the said College immediately before the commencement of this Act and upon the same terms and conditions unless and until the Council of the University otherwise decide.

Saving for existing officers of Mason University College.

13.—Clauses fifty and fifty-one of the Scheme set forth in the Schedule to the Queen's College Birmingham Act 1867 shall be read and have effect as if the University were mentioned therein instead of the College so that students in the faculty of medicine of the University shall have at all times provided for them by the physicians and surgeons of the Queen's Hospital at Birmingham such clinical instruction as therein mentioned and shall have free access to the said Hospital for the purposes of clinical instruction as therein mentioned. Provided that any such dispute between the University and the said Hospital or between the said Hospital and any physician or surgeon thereof as therein mentioned shall be referred to the visitor of the University whose decision shall be binding on the parties to the dispute.

Application of certain provisions of Scheme scheduled to Queen's College Birmingham Act 1867.

14.—The Charitable Trusts Acts 1853 to 1894 shall not extend to the University of Birmingham or any

As to jurisdiction of Charity Commissioners.

College or Hall therein and the said University and and any such College or Hall shall be exempt from the control or jurisdiction of the Charity Commissioners.

sts of Act.

15.—The costs charges and expenses of and incidental to preparing obtaining and passing this Act shall be defrayed by the University of Birmingham out of the income of the property by this Act transferred to the University or if the Council of the University think fit out of money representing capital or to be raised by sale or mortgage of some part of the said property.

NOTE ON CLAUSE 13.

By an Act entitled "An Act for the Regulation of the Queen's College at Birmingham, and for incorporating the Queen's Hospital at Birmingham" but having the short title of "The Queen's College Birmingham Act 1867" which received the Royal Assent on the 12th day of August 1867 the Queen's Hospital was separated from the Queen's College and separately incorporated by the title of "The Queen's Hospital Birmingham," but for the purpose of preserving the right the Queen's College had of clinical instruction for its students in the Hospital the following clauses Numbered 50 and 51 in the Scheme sanctioned by the Act were inserted in the Schedule to the Act :—

The Hospital shall be maintained as a Clinical Hospital, and afford every facility for clinical instruction ; and such persons shall from time to time be appointed to be Physicians and Surgeons of the Hospital whose certificates as to clinical instruction

shall be accepted by the Medical Examining Boards of the United Kingdom; and such Physicians and Surgeons shall hold their respective offices on condition of giving to all students of the *College* such clinical instruction in kind and quantity and in such manner as shall from time to time be required by the said Medical Examining Boards.

The students of the *College* shall at all times have free access to the Hospital for the purposes of clinical instruction, upon payment of such fees and on such other terms and conditions as shall be from time to time agreed upon between the Council and the Hospital. Any dispute between the *College* and the Hospital regarding such fees terms or conditions or otherwise regarding the privileges to be enjoyed by the students of the *College* under this clause or the preceding clause, or any dispute between the Hospital and any Physician or Surgeon thereof as to the preceding clause, shall be referred to the Visitor of the *College*, whose decision shall be binding on the parties to the dispute.

The effect of clause 13 is to substitute *University* for *Queen's College*.

Court of Governors.

Chancellor :

The Right Hon. J. CHAMBERLAIN, M.P.

Vice-Chancellor :

CHARLES GABRIEL BEALE, Esq., M.A., J.P.

Pro-Vice-Chancellor and Treasurer :

FRANCIS CORDER CLAYTON, Esq., J.P.

Life Governors :

The Most Hon. The Marquess of HERTFORD.
 The Right Hon. The Earl of DUDLEY.
 The Right Hon. The Earl of HARROWBY.
 The Right Hon. The Earl of WARWICK.
 The Right Hon. The Earl of BRADFORD.
 The Right Hon. The Earl of DARTMOUTH.
 The Right Hon. The Earl of DENBIGH.
 The Right Hon. The Viscount COBHAM.
 The Right Rev. JOHN PERCIVAL
 (Lord Bishop of Hereford).
 The Right Hon. Lord BURTON.
 The Right Hon. Lord CALTHORPE.
 The Right Hon. Lord LEIGH.
 The Right Hon. Lord NORTON.
 The Right Hon. Lord WINDSOR.
 The Right Hon. Lord WROTTESLEY.
 The Right Hon. Sir HENRY HARTLEY FOWLER,
 G.C.S.I., M.P.
 The Right. Hon. WILLIAM KENRICK.
 Sir HENRY WIGGIN, Bart.
 Sir JOHN JAFFRAY, Bart.
 Sir BENJAMIN HINGLEY, Bart.
 Sir JOHN CHARLES HOLDER, Bart.
 Sir BALTHAZAR WALTER FOSTER, M.P.
 Sir ALFRED HICKMAN, M.P.
 Sir JOHN BENJAMIN STONE, M.P.
 Sir RICHARD TANGYE, J.P.
 Sir WILLOUGHBY FRANCIS WADE, M.D., F.R.C.P.
 GEORGE JAMES JOHNSON, Esq., J.P.
 GEORGE HAMILTON KENRICK, Esq.
 ROBERT FRANCIS MARTINEAU, Esq.
 EDWARD LAWLEY PARKER, Esq., J.P.
 OSMUND AIRY, Esq., LL.D.
 WILLIAM ANSELL, Esq., J.P.
 EDWARD ANSELL, Esq.
 WILLIAM BEILBY AVERY, Esq.
 GEORGE STACEY ALBRIGHT, Esq., M.A., J.P.

Life Governors—continued.

WILLIAM ARTHUR ALBRIGHT, Esq.
 WILLIAM ELIJAH BENTON, Esq., Assoc.R.S.M.
 ALICE BEALE.
 THOMAS BARNESLEY, Esq. J.P.
 GEORGE EDWARD BELLIS, Esq.
 FRANCIS SEDDON BOLTON, Esq., J.P.
 JAMES BOOTH, Esq., J.P.
 GEORGE CADBURY, Esq., J.P.
 ELSIE MARY CADBURY.
 HELEN CADDICK.
 ANDREW CARNEGIE, Esq.
 ARTHUR CHAMBERLAIN, Esq., J.P.
 JOSEPH AUSTEN CHAMBERLAIN, Esq., M.P.
 JOSEPH BENNETT CLARKE, Esq., J.P.
 ALEXANDER MACOMB CHANCE, Esq., J.P.
 JOHN HOMER CHANCE, Esq.
 GILBERT HENRY CLAUGHTON, Esq., J.P.
 WILLIAM BARWICK CREGOE-COLMORE, Esq.
 WILLIAM THOMAS GUSTAVUS COOK, Esq., J.P.
 JOHN CORBETT, Esq., J.P.
 FREDERICK CORBETT, Esq., J.P.
 HARRIET ELIZABETH GERTRUDE DALE.
 ARTHUR STANSFELD DIXON, Esq., M.A.
 CHARLES WOOLRYCHE DIXON, Esq.
 JAMES ERNEST DIXON, Esq.
 FREDERICK ELKINGTON, Esq., J.P.
 JOHN FEENEY, Esq., J.P.
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 WILLIAM GIBBINS, Esq.
 CAROLINE GIBBINS.
 THOMAS GLADSTONE, Esq., J.P.
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 WILLIAM HENRY GREENWOOD, Esq.
 FELIX HADLEY, Esq., J.P.
 EDITH HARROLD.
 OBED CHARLES HAWKES, Esq.
 JAMES RICHARDSON HOLLIDAY, Esq., B.A.
 WALTER LOVERIDGE HODGKINSON, Esq.
 CHARLES HOLCROFT, Esq., J.P.
 WILLIAM HOLCROFT, Esq., J.P.
 CHARLES HARDING, Esq.
 ALFRED BRADLEY HOLINSWORTH, Esq.
 CHARLES BRADLEY HOLINSWORTH, Esq.
 JOHN BERNARD HARDMAN, Esq.
 WILLIAM HARRIS, Esq., J.P.
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Surgery.*Professor* : BENNETT MAY, M.B., B.S., F.R.C.S.*Professor* : GILBERT BARLING, M.B., B.S., F.R.C.S.*Assistant* : G. HEATON, M.B., F.R.C.S.**Pathology and Bacteriology.***Professor* : R. F. C. LEITH, M.A., M.B., F.R.C.P.*Demonstrator in Pathology* : J. D. STANLEY, M.D., M.R.C.P.*Lecturers in Bacteriology* : { C. LEEDHAM-GREEN, M.D., F.R.C.S.
W. D'ESTE EMERY, M.D.**Hygiene and Public Health.***Professor* : A. BOSTOCK HILL, M.D., D.P.H.**Materia Medica.***Lecturer* : J. COOLE KNEALE, L.R.C.P., L.R.C.S., Edin., M.P.S.*Demonstrator* : (Vacant).**Therapeutics.***Professor* : A. FOXWELL, M.A., M.D., F.R.C.P.**Midwifery.***Professor* : EDWARD MALINS, M.D., M.R.C.P.*Assistant* : C. E. PURSLOW, M.D., M.R.C.P.**Gynæcology.***Professor* : J. W. TAYLOR, M.D., F.R.C.S.*Assistant* : C. E. PURSLOW, M.D., M.R.C.P.**Forensic Medicine and Toxicology.***Professor* : J. T. J. MORRISON, M.A., M.B., B.C., F.R.C.S.*Lecturer on Toxicology* : A. BOSTOCK HILL, M.D.**Mental Diseases.***Professor* : E. B. WHITCOMBE, M.R.C.S.**Operative Surgery.***Professor* : JORDAN LLOYD, M.B., M.S., F.R.C.S.**Ophthalmology.***Professor* : PRIESTLEY SMITH, M.R.C.S.**Dental Surgery.***Lecturer* : F. E. HUXLEY, M.R.C.S., L.D.S.**Dental Anatomy and Physiology.***Lecturer* : JOHN HUMPHREYS, L.D.S.I., F.L.S.**Dental Mechanics.***Lecturer* : A. E. DONAGAN, B.A., L.D.S.

Dental Histology and Pathology.

Lecturer : J. D. WHITTLES, L.D.S.

Dental Metallurgy.

Lecturer : GODFREY MELLAND, B.Sc., Assoc. R.S.M.

Medical Diseases of the Mouth, &c.

Lecturer : T. STACEY WILSON, M.D., M.R.C.P.

Surgical Diseases of the Mouth, &c.

Lecturer : FRANK MARSH, F.R.C.S.

Operative Dental Surgery.

Demonstrator : W. T. MADIN, L.D.S.

Emeritus Professors :

English.

Professor : EDWARD ARBER, F.S.A.

Engineering.

Professor : ROBERT H. SMITH, M.I.M.E., Assoc. M.I.C.E.

Forensic Medicine.

Professor : J. ST. S. WILDERS, M.R.C.S.

DAY TRAINING COLLEGE.

Head Mistress :

Miss A. H. JOYCE.

Assistant Mistresses :

Miss F. C. M. CLARK, B.A., Lond.

Miss LILIAN BROWN.

Miss FLORENCE WARREN.

Miss A. N. JOHNSTON, B.A. (Vict.)

Master of Method (Men) :

FRANK ROSCOE.

Secretary :

GEO. H. MORLEY.

Assistant Secretary :

FREDK. E. MOORE.

Hon. Librarian :

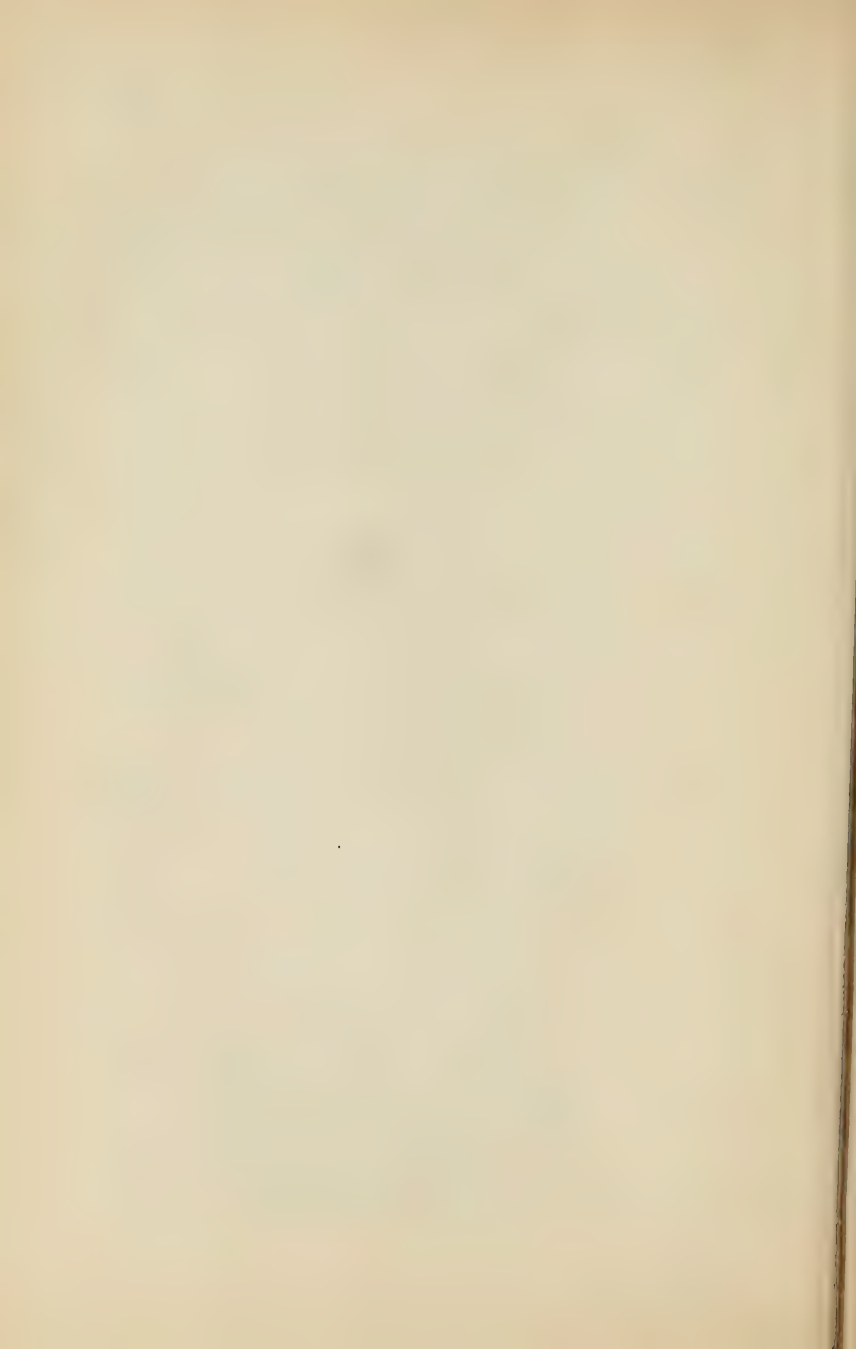
Professor W. MACNEILE DIXON, Litt.D., M.A., LL.B., Dub.

Librarian :

WILLIAM H. COPE.

Clerk to the Dean of the Medical Faculty :

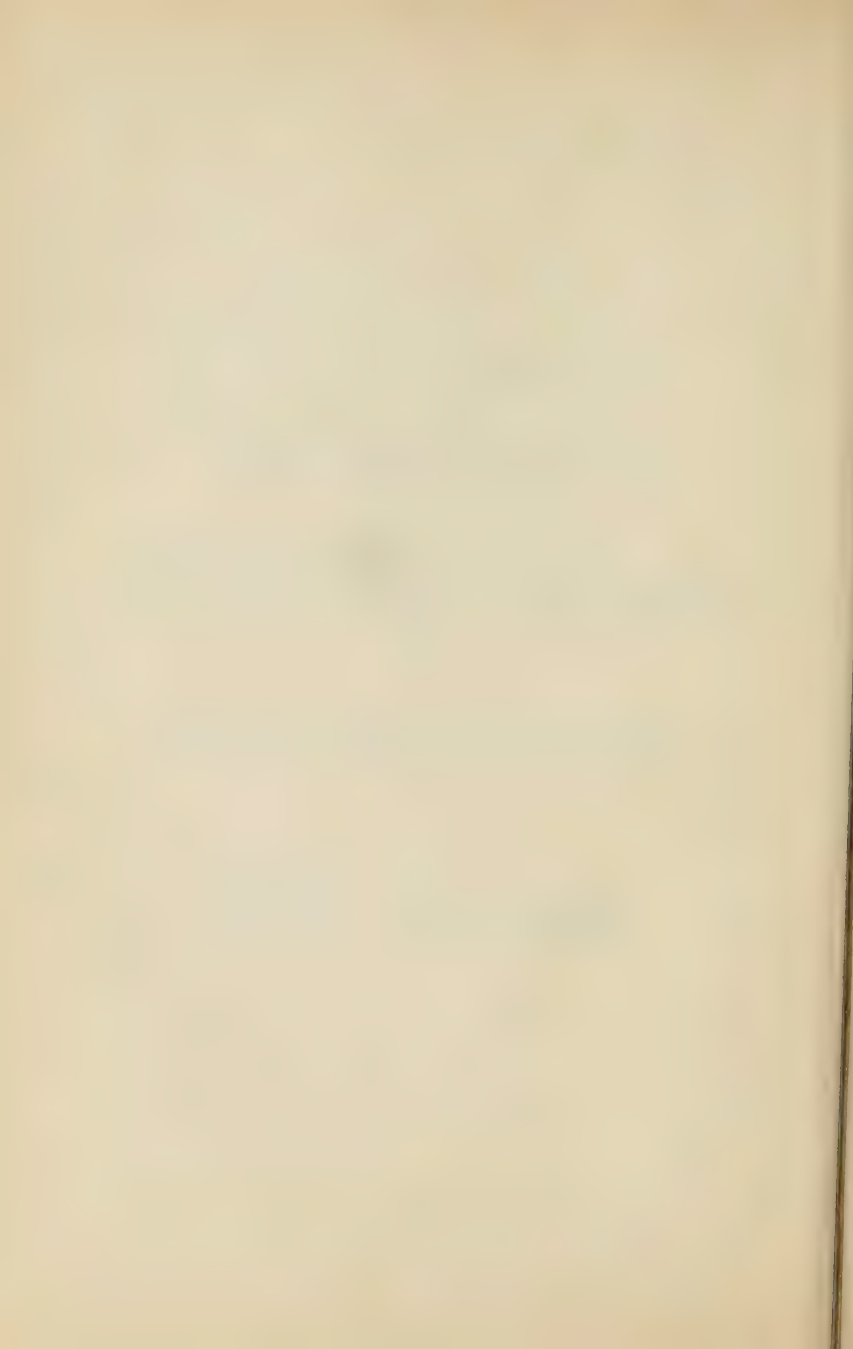
EDWD. B. LAWLEY.



FACULTIES OF
SCIENCE AND ARTS.

REGULATIONS FOR DEGREES.

SYLLABUS OF COURSES.



UNIVERSITY OF BIRMINGHAM.

SESSION 1900-1901.

FACULTIES OF SCIENCE AND ARTS.

UNIVERSITY TERMS.

The University Session, or academic year, is divided into three terms—Winter, Spring, and Summer. The WINTER TERM commences Tuesday, October 2nd, and ends Saturday, December 15th, 1900; the SPRING TERM commences Tuesday, January 8th, 1901, and ends Saturday, March 23rd, 1901; the SUMMER TERM commences Tuesday, April 16th, and ends Saturday, June 29th. The month of June is chiefly devoted to University Examinations.

ADMISSION OF STUDENTS.

1.—All the courses of study in the Faculties of Science and Arts are open to men and women on the same terms. Separate cloak rooms and reading rooms in the east wing (ground floor) are reserved for the accommodation of women students.

2.—Every person seeking admission as a student must be at least sixteen years of age, and must produce a certificate of good conduct from his or her last instructor, or such testimonial or reference as shall be satisfactory to the Principal.

3.—Students on applying to enter any class are required to sign an engagement that they will observe the Ordinances

of the University and conform to such regulations as have been or may be made for the maintenance of order in the University, and in the classes they attend.

4.—The Vice-Principal, the Deans of the Faculties and the Professors will be present on Monday, October 1st, from ten o'clock a.m. to one o'clock p.m. to confer with intending students and give them advice respecting their courses of study.

5.—Application for admission to classes must be made either in writing or personally to the Secretary of the University. The Secretary's office is open from 9 to 1 and from 2 to 5, except on Saturdays, when it is open from 9 to 1 only.

6.—All Fees are to be paid in advance (*i.e.*, at the beginning of the Session or Term on account of which they are due) at the Secretary's Office, in the University. Cheques should be drawn in favour of Mr. Geo. H. Morley. *Students should not enter for classes until after mature consideration, as fees once paid cannot be returned.*

7.—Within the first week of attendance at any class, each Student is required to present to the Professor either a ticket for that class, or a written statement from the Vice-Principal showing the reason why delay in taking out such ticket has been allowed.

8.—Students intending to take lodgings in Birmingham or the vicinity are requested to place themselves in communication with the Secretary.

UNDERGRADUATES.

Although the classes in the University are open to all students who may wish to join them, only students who have passed the Matriculation examination or an examination accepted by the University as the equivalent of the Matriculation are eligible to become candidates for Degrees

in the University ; such candidates are required to sign the Register of Matriculated Students, and after registration become Undergraduates of the University. Undergraduate Students enjoy the status of Membership of the University and are entitled to the privileges of the Guild of Undergraduates. Undergraduates are required to wear academic dress when in attendance upon University lectures and upon all official occasions. Students who are not Undergraduates are not entitled to wear academic dress.

FEES.

The Fee for each course of study is appended to the Syllabus of the course.

Students are required to pay an Entrance Fee, which includes all charges for Registration, and for the use of the Library and common rooms.

The following statement shows the Entrance Fees for a Session or a Term :—

		<i>Session.</i>			<i>Term.</i>		
		£	s.	d.	£	s.	d.
Students attending in <i>three</i> or		£	s.	d.	£	s.	d.
more Subjects	... ..	1	1	0	0	10	6
Students attending in <i>one</i> or <i>two</i>							
Subjects	... ..	0	10	6	0	5	0

REGULATIONS TO BE OBSERVED BY ALL STUDENTS.

1.—Students are not permitted to be in the University buildings before 8.45 a.m., nor after 6 p.m., unless attending classes or the meetings of some Society of the University.

2.—All Students are required to conduct themselves in a quiet and orderly manner whilst in the University, not only during lecture hours, but on entering and leaving the building.

3.—Smoking is prohibited in the corridors and front hall of the University buildings.

4.—Card playing is prohibited in any part of the buildings.

5.—Students committing any damage to the University building, or University property, will be required to pay for making good the same, and may be excluded from the University till payment is made.

6.—Students are required to attend punctually and regularly at the lectures and classes for which their names are entered.

7.—When a Student has been absent it is desirable that he should report the cause of his absence to the Professor on his return to the class. In the event of illness or unavoidable absence notice should be sent to the Dean of his Faculty as soon as convenient.

LIBRARY REGULATIONS.

1.—The Library is open daily during the Session from 9 a.m. to 6 p.m., except on Saturdays when it is closed at 1 p.m. It is closed at 5 p.m. during the vacations. It is also closed during part of the long vacation for cleaning purposes.

2.—The Library being set apart expressly for study, *all conversation is strictly prohibited*. Students are required to sit at the tables, and are not permitted to stand about in any part of the Library.

3.—Students are permitted to take books from the shelves, but they are to be *returned to the Librarian* and are not to be re-placed upon the shelves by the readers.

4.—The Library is to be used by *present day students, for reference and study only*, and no books, pamphlets or journals, &c., are to be taken from it, except by members of the Teaching Staff.

5.—Certain valuable books of reference (including Dictionaries and Encyclopædias) as indicated by the Council, are not allowed to be taken from the Library. Current Journals, Transactions of Societies, &c., are not allowed to be taken from the Library until after the publication of a succeeding part.

6.—In the event of a book being damaged by scribbling, tearing, &c., the person damaging it will be required to supply another copy in its place to the satisfaction of the Council. Any defect in a printed book should be pointed out to the Librarian.

7.—Books borrowed from the Library must be returned to the Librarian before the expiration of 15 days, subject to a renewal for a further period of 15 days, unless required by another reader.

8.—All books, pamphlets, &c., in the hands of borrowers must be returned to the Librarian on or before the last day of the Session.

9.—The Librarian is authorised to exclude from the privileges of the Library any person infringing its regulations.

LOCKERS FOR BOOKS, &c.

Lockers are provided in the locker room (first floor), and in the hat and coat room of the Medical School to enable students to preserve their books and papers in safety, at a charge of one shilling per Term, or two shillings and sixpence per Session. Each student will be supplied with a key, upon which a deposit of one shilling will be charged. The key must be delivered up on or before the last day of the Term or Session for which payment has been made, or the deposit will be forfeited.

A master-key of all the lockers is kept in the office.

REGULATIONS FOR MATRICULATION EXAMINATION.

Candidates for any Degree must have passed the Matriculation Examination of the University, or must produce evidence that they have passed one of the examinations which the University accepts as an equivalent to the Matriculation Examination. A schedule of such examinations is appended.

The Matriculation Examination is open to all candidates who have completed their sixteenth year on or before the first day of the examination.

There will be a Matriculation Examination commencing on Monday, 17th September, 1900. In the year 1901 the examination will commence on the first Monday in June. Candidates for the examination in the year 1900 must apply to the Registrar for a form of entry, which must be returned on or before September 1st, accompanied by a certificate of birth, by a certificate of good character from the last school attended or from some responsible person, and by the proper fee. In the year 1901 the last day for receiving the form of entry with its enclosures will be Monday, May 13th.

The Fee for the Matriculation Examination is £2; and in cases of failure or withdrawal from the examination, for each subsequent Examination £1.

The examination will be conducted by means of printed papers, and in Latin, Greek, and modern foreign languages there will also be a *viva voce* examination; but in other subjects the examiners will not be precluded from putting *viva voce* questions to any candidate.

The subjects for examination will be as follows:—

- (1) English Language, Literature, and History.
(Two papers.)

- (2) Any two Languages out of the following :—
Latin, Greek, French and German. (Two papers in each Language.)
- (3) Mathematics. (Two papers.)
- (4) One Science subject chosen from the following :—
Mechanics, Chemistry, Physiography, Botany, Animal Biology. (One paper.)

N.B.—Candidates for Degrees in Arts or Medicine are required to take Latin as one of the subjects of examination.

In September 1900, the scope of the various subjects and the set books will be the same as those prescribed for the Matriculation of the University of London in June 1900.

The following are the particulars of the foregoing subjects of Examination in June 1901 :—

1. English.

- (i.) Outlines of English History and Literature.
[Stopford Brooke's Primer represents the standard of knowledge required in English Literature.]
- (ii.) English Grammar, including Parsing and Analysis.
- (iii.) Shakspeare's *Henry V.*

2. (a) Latin and Greek.

- (i.) Translation from a prescribed book, with questions on the subject matter.
- (ii.) Translation of easy passages at sight.
- (iii.) Questions on Grammar (Accidence and Syntax).
- (iv.) Easy composition, based on the vocabulary and subject matter of the prescribed book.
- (v.) Reading aloud of parts of the prescribed book with due regard to quantities and intonation.

Prescribed books for the Examination in September, 1900 :—

Latin : Cæsar, *De Bello Gallico*, iv. 20—v. 23 (the Invasion of Britain).

Greek : Euripides, *Hecuba*.

Prescribed books for the Examination in June 1901 :—

Latin : Sallust, *Catiline*.

Greek : Lucian, *Charon* and *Timon*.

(b) **French.**

- (i.) Translation from a prescribed French text.
- (ii.) Translation of unseen passages of easy French prose.
- (iii.) Translation of a few lines of easy English prose into French.
- (iv.) Grammar questions in Accidence and Elementary Syntax.
[Great stress will be laid upon the accuracy of the answers to these questions.]
- (v.) *Viva voce*. Reading aloud and dictation. Conversation (optional).

Prescribed text for June 1901 :—

Charles Normand: *L'émeraude des Incas*. [Macmillan and Co.]

(c) **German.**

- (i.) Translation from a prescribed German book.
- (ii.) Translation at sight of easy German prose into English.
- (iii.) Translation of a short passage of easy English prose into German.
- (iv.) Grammar questions in Accidence and Elementary Syntax.
- (v.) *Viva voce*. Reading and Dictation.

Prescribed book for June 1901 :—

W. H. Riehl : *Die vierzehn Nothelfer*. [Swan Sonnenschein and Co.]

3. Mathematics.

Arithmetic. The ordinary rules, vulgar and decimal fractions, methods of manipulation of decimals in approximations, square root, proportion, interest, discount, stocks.

Algebra. The ordinary rules, factors, fractions, simple equations in one or more unknown quantities, quadratic equations and problems.

Geometry. The substance of Euclid, Books I.—IV. with Exercises.

In Geometry any valid proof will be accepted provided it does not violate the order of the propositions of Euclid.

4. (a) **Mechanics.**

Statics. Force measured in pounds weight or grammes weight. Equilibrium under two equal and opposite forces. Equality of the action and reaction between two bodies. Transmissibility of force by strings, ropes, and rigid connexions. Experimental investigation of the conditions for the equilibrium of a body when acted on by three parallel forces. Resultant. Moment of a force about a point. Balancing of moments when a body is in equilibrium. Centre of parallel forces. Centre of gravity and the experimental investigation of its position. Stability and instability of a body, supported from a point or on a base. Work and rate of working. Foot pound and horse power. The lever, the balance, the single string system of pulleys, the wheel and axle, the differential pulley, as illustrations of parallel forces, and of the principle of work. Experimental investigation of the conditions for the equilibrium of a body when acted on by three forces not parallel. The triangle of forces. The parallelogram of forces. Graphic resolution and composition of forces. Simple cases of resultant of two forces acting at a point. Balancing of moments when a body is in equilibrium. Inclined plane. Windmill. Sailing. Screw, toothed and worm wheels, as treated by the principle of work. Efficiency of machines always reduced by friction.

Hydrostatics. Distinction between liquids and gases. Pressure at a point in a fluid. Equality of pressure at points on the same level. Change of pressure with depth. Surface of a liquid level. Transmission of pressure in liquid. Hydraulic press. Pressure against horizontal surfaces and vertical containing walls. Archimedes' principle. Density and specific gravity. Methods of finding specific gravities. Relation between volume and pressure in a gas. Air pumps. Atmospheric pressure. Barometers. Common pumps. Force pump.

Dynamics. Units of length and time. Velocity. Uniform acceleration. Use of formulæ connecting velocity, time and distance travelled, with acceleration. Mass. Equal masses are those having equal acceleration under equal forces. Simple experiments to show that mass is proportional to weight at the same place. Constancy of mass under change of physical and chemical condition. Momentum and rate of change of momentum. Force measured by rate of change of momentum. Dyne and poundal. Momentum measure of force proportional to its weight measure. Relation between weight measure and momentum measure. *g*. Atwood's machine. Momenta generated in two bodies by their mutual action, equal and opposite. Constancy of momentum. Kinetic energy and Work.

(b) **Chemistry.**

Gaseous, liquid, and solid states of matter.

Nature of chemical change. Elements, compounds, and mixtures.

Types of chemical action.

Solution, crystallisation, distillation, diffusion.

Chemical and physical properties of air and water.

Nature of acids, bases, and salts.

Nature, occurrence, chief modes of preparation, and principal properties of the following non-metallic

elements and their more important compounds :
Hydrogen, Oxygen, Carbon, Silicon, Sulphur,
Nitrogen, Phosphorus, Fluorine, Chlorine,
Bromine, and Iodine.

Combination by weight and volume. Symbols,
equations, and calculations relating to weight
and volume. Nomenclature.

Chemical and Physical characteristics of metals as
illustrated by Sodium, Calcium, Iron, Zinc,
Lead, Mercury, Copper, and Silver.

Candidates are required to show knowledge of a
concrete and experimental character throughout.

(c) **Physiography.**

The Earth in its relation to the other bodies in the
Solar System ; the form and size of the Globe ;
its movements and their effects in day and
night, the seasons, eclipses.

The Surface of the Earth. General distribution of
land and water ; the contour, relief and chief
features of the continental land areas.

The Atmosphere. Its composition and density ; the
determination, distribution and representation
of its temperature, and pressure ; the circulation
of the air, permanent and periodic winds,
storms ; the moisture of the air, dew, hoarfrost,
fog, mist, clouds, rain, snow and hail ; general
distribution of rain-fall and its causes ; weather-
charts, and storm warnings, climate.

The Sea. Composition, specific gravity and
temperature of sea-water ; depths of the ocean,
form and deposits of its floor ; movements of
the ocean water ; waves, tides and currents.

The Land. The chief constituents of the earth-crust,
stratified and unstratified rocks ; the work of
rain, frost, rivers and ice ; springs, glaciers,
valleys, waterfalls, lakes, meadows, deltas ;
earth-movement and earthquakes ; volcanoes,
their phenomena and distribution.

Life. The geographical distribution of animals and plants ; biological regions.

(d) **Botany.**

A. Plant Form as a key to Relationships.

The Candidate is expected to have *practical* familiarity with

- (1) The chief characters of root, stem, bud, and leaf of the principal British plants of quite general distribution and of garden plants of general cultivation, and with the nature and structure, as determinable by eye or lens, of common bulbs, fruits, seeds, or other vegetable products in ordinary use, and universally met with in shop or market.
- (2) The most important floral and fruiting characters of the following British Natural Orders:—Ranunculaceæ, Cruciferæ, Violaceæ, Caryophyllaceæ, Leguminosæ, Rosaceæ, Umbelliferæ, Compositæ, Primulaceæ, Scrophularinæ, Labiataæ, Cupuliferæ, Liliaceæ.
- (3) To be able to describe concisely and in systematic fashion, flowering or fruiting specimens taken from (1) or (2) as above, the various parts being known by their technical names, but otherwise more importance being attached to acuteness of observation than to the memory of technical terms.

B. How Plants live, grow, and reproduce.

- (4) The mode of development of the plant, the elementary facts of nutrition and respiration, the nature and function of root, stem and leaf, and their relations with external conditions and forces, to be determined *experimentally* by the aid of seedlings grown in the class-room from the following typical seeds or one-seeded fruits, viz., castor-oil *or* buck wheat, pea *or* bean, sunflower, mustard *or* cress, and maize,

wheat or barley, and the bulb of hyacinth or onion.

- (5) The functions of the floral parts, their relations with pollination, the production and protection of seeds, and the provisions for seed-dispersal, especially as illustrated in the Natural Orders named above.

(c) Animal Biology.

- (a) Distinctive properties of living matter or protoplasm, as illustrated by the structure and mode of life of the Proteus-animalcule or *Amœba*. Differences between Animals and Plants. The nature of the Cell.
- (b) The general structure of the Frog. Elementary physiology of the Frog. The organs of digestion and their use. The nature of blood. The structure of the heart, and the arrangement of the more important blood vessels. The use of a circulatory system. The nature of excretory organs. Mode of breathing. The kidneys and their use.
- (c) The more important facts in the structure and habits of the fresh water Polype (*Hydra*); the Earth Worm (*Lumbricus*); and the Cray Fish (*Astacus*).
- (d) Methods of reproduction in animals. The egg-cell and the sperm-cell. Fertilization of the egg. Segmentation of the fertilized egg. The metamorphosis of the Frog, treated in an elementary fashion.

A list of Candidates who have passed the Examination will be published, arranged in two divisions, in each of which the names will be placed in alphabetical order.

A pass-certificate signed by the Registrar will be given to each successful Candidate after the list is published.

Unsuccessful Candidates will be informed of the subjects in which they have failed on application to the Registrar after the publication of the list.

Schedule of Examinations

Accepted by the University in lieu of the Matriculation Examination.

1. The Matriculation Examination of any recognised University, or the examination corresponding to the Matriculation Examination.

2. The Higher Certificate Examination of the Oxford and Cambridge Examinations Board.

Provided that candidates claiming exemption by virtue of this Examination have passed in the subjects and in the number of subjects required by the Regulations of the Matriculation Examination of the University of Birmingham, and at the time of application for exemption have attained the age required by those Regulations.

In the above-named Higher Certificate Examination the subjects of Mathematics (Additional), Natural Philosophy (Mechanical Division), Natural Philosophy (Chemical Division), and Biology are deemed to be equivalent to Mathematics, Mechanics, Chemistry and Botany, respectively, as required by the said Regulations.

Forms of Application for persons desiring to matriculate in the University by virtue of any other Examination than the Matriculation Examination of the University may be obtained from the Registrar.

ENTRANCE EXHIBITIONS.

Two Entrance Exhibitions, not exceeding in value the sum of £25 each, will be awarded on the results of the Matriculation Examination in June 1901, provided that a proper standard is reached by the candidates. Candidates for the Exhibitions must be under the age of nineteen years on the first day of the examination. The Exhibitions will be tenable at the University during the Session immediately following the Examination, and will be paid solely in the form of remission of class fees.

REGULATIONS FOR DEGREES IN THE FACULTY OF SCIENCE.

No degree can be obtained without attendance upon certain prescribed courses of study in the University, extending over a period of at least three years after registration, and no attendance upon lectures in the University prior to registration will be accepted as any part of the qualification necessary for a degree. Before entering for an examination of the University, each undergraduate is required to present a certificate of qualification, stating that he has attended to the satisfaction of the Professors concerned not less than two-thirds of the lectures and practical classes, and that he has passed such class examinations and performed such other exercises as his teachers may prescribe in connexion with their own courses, to the satisfaction of the Faculty.

Candidates who have failed in any of the subjects offered for examination may be required by the Faculty to attend a further course in that subject before sitting for a subsequent examination.

B.Sc. Degree.

Candidates for this degree are required to pass two University Examinations, the *Intermediate* and the *Final*.

INTERMEDIATE EXAMINATION.

Candidates for the Intermediate Examination are required to have attended University Courses of study for at least one academic year after registration in each of the following subjects :—

- (i.) Pure Mathematics.
- (ii.) Physics.
- (iii.) Chemistry.
- (iv.) Elementary Biology.

Two printed examination papers will be set in each of the four subjects of examination, and there will be a practical examination in Physics, Chemistry, and Elementary Biology. Examiners will not be precluded from holding a *viva voce* examination in any subject if they think fit.

Candidates who pass in two or more subjects will be allowed to offer themselves for the remaining subjects at a subsequent examination.

FINAL EXAMINATION.

Candidates for the Final Examination are required to have spent at least three academic years in attendance on courses of study in the University after passing the Matriculation Examination, and are also required to satisfy their Professors, in consultation with the Professors of French and German, that they can translate passages from memoirs and treatises on their principal subject of study in both French and German. All such candidates are required to take University Courses in one principal subject and two subsidiary subjects under the following groups :—

Principal Subjects :—Mathematics (Pure and Applied), Physics, Chemistry, Geology, Zoology, Botany, Physiology, Anatomy and Anthropology, Psychology.

Subsidiary Subjects :—Pure Mathematics, Applied Mathematics, Elementary Pure Mathematics together with Elementary Applied Mathematics, Chemistry, Geology, Botany, Zoology, Physiology, Psychology.

Double Subsidiary Subjects (counting as two each).—Physics, Chemistry, Geology, Botany, Zoology, Physiology, Anatomy and Anthropology, Psychology.

The principal subjects must be studied for two years, while subsidiary subjects need in general only be studied for one year; but Subsidiary Mathematics extends over two years. By the selection of a double subsidiary subject, a student is enabled to continue the study of a subsidiary

subject for a second year, instead of choosing a fresh subsidiary subject. The examination in principal subjects will be of a higher standard and will cover a wider range than the examination in subsidiary subjects.

The examination in subsidiary subjects may be taken at the conclusion of the courses.

The examination will be conducted by printed papers and also by tests of practical work : but the Examiners will not be precluded from holding a *viva voce* examination in any subject, if they think it desirable.

The B.Sc. class lists will be published in three divisions, the first of which will be called Honours, and will contain the names of those candidates who distinguish themselves in their principal subject.

M.Sc. Degree.

Bachelors of Science may be admitted to the degree of Master of Science after a further course of study extending over not less than one academic year.* Candidates are required either—

- (i.) To present a thesis and, if the Examiners think it desirable, to pass a *viva voce* examination ;
or—
- (ii.) To pass an examination, both written and practical.

D.Sc. Degree.

Candidates may be admitted to the degree of Doctor of Science, after the expiration of at least two academic years after qualifying for the B.Sc. degree, on the presentation and approval of a printed and published thesis embodying the results of original research, or generally contributing to the advancement of Science.

* In ordinary cases, the year of study must be spent at the University of Birmingham ; but Candidates desirous of pursuing some special line of study at some other place may receive permission to do so on the recommendation of the Faculty.

REGULATIONS FOR DEGREES IN THE FACULTY OF ARTS.

No degree can be obtained without attendance upon certain prescribed courses of study in the University extending over a period of at least three years after registration, and no attendance upon lectures in the University prior to registration will be accepted as any part of the qualification necessary for a degree. Before entering for an examination of the University each undergraduate is required to present a certificate of qualification stating that he has attended to the satisfaction of the professors concerned not less than two-thirds of the lectures and classes, and that he has passed such class examinations, and performed such other exercises as his teachers may prescribe in connexion with their own courses, to the satisfaction of the Faculty.

Candidates who have failed in any of the subjects offered for examination may be required by the Faculty to attend a further course in that subject before sitting for a subsequent examination.

B.A. Degree.

Candidates for this degree are required to pass two University examinations, the *Intermediate* and the *Final*.

INTERMEDIATE EXAMINATION.

Candidates for the Intermediate Examination are required to have attended University courses of study for at least one academic year after registration in each of the following subjects :—

- (i.) Latin.
- (ii.) English Language, Literature and History.
- (iii.) Either Pure Mathematics or Logic.
- (iv.) Two of the following, of which one must be a modern foreign language :—Greek, French, German, Italian, Spanish, Logic or Pure Mathematics (if not already selected under iii.), a Physical or Natural Science.

Two printed examination papers will be set in each of the five subjects of Examination. There will also be a

viva voce examination in Latin, Greek, and Modern Foreign Languages. The Examiners, however, will not be precluded from holding a *viva voce* examination in any subject if they think it desirable.

Candidates who pass in three or more subjects will be allowed to offer themselves for the remaining subjects or subject at any subsequent examination.

FINAL EXAMINATION.

Candidates for the Final Examination are required to have spent at least three academic years in attendance on lectures in the University after passing the Matriculation Examination. All such candidates are required to take University courses of study in five subjects, one under each of the following headings, of which subjects any three shall be principal subjects, and shall be studied for two years each, the remaining two subjects being subsidiary subjects, and studied for one year each.

- (i.) One Ancient Language and Literature (Latin, Greek).
- (ii.) One Modern Foreign Language and Literature (French, German, Italian, Spanish).
- (iii.) Either English Literature or History (Ancient or Modern).
- (iv.) Either Mathematics or Philosophy.
- (v.) A "special subject" to be selected among the subjects taught in the University at compatible hours. This subject must be either—
 - (a) A fifth subject (other than the four already selected) from one of the preceding four groups, or—
 - (b) A fifth subject not contained in any of the above groups, studied for one year as a subsidiary subject; *e.g.*, Logic (if not already taken at the Intermediate Examination), Political Economy, History of Educational Ideas, a Physical or Natural Science.

The examination in subsidiary subjects may be taken at the conclusion of the courses.

There will also be a *viva voce* examination in Latin, Greek, and Modern Foreign Languages. The Examiners, however, will not be precluded from holding a *viva voce* Examination in any subject, if they think it desirable.

The B.A. class lists will be published in three divisions, the first of which will be called Honours, and will contain the names of those candidates who distinguish themselves in one or more of their principal subjects.

M.A. Degree.

Bachelors of Arts may be admitted to the degree of M.A. on passing an Examination after at least one year of further study* in one or in two of the principal subjects taken at the B.A. Degree, and presenting a dissertation indicative of acquaintance with the methods of research and connected with the subject or with one of the subjects offered for examination.

D.Phil. and D.Litt. Degrees.

Masters of Arts may be admitted to the degree of D.Phil. (Doctor Philosophiæ), or D.Litt. (Doctor Litterarum), on the presentation and approval of a printed or type-written dissertation or thesis embodying the results of original research, or generally contributing to the advancement of learning.

Teachers' Diploma.

Students who have *either* passed the Intermediate Examination in Arts or Science of the University of Birmingham, *or* taken a First Class in the Government Certificate Examination after completing a course of two years' study in the Day Training College of the University, may qualify for a Teachers' Diploma by attending courses of lectures and passing an examination in Psychology, Moral Philosophy, and the History of Educational Ideas and School Method, of the same standard as that required for the B.A. degree. Candidates who do not take the Government Certificate will in addition be required to pass a practical examination in the art of teaching.

* In ordinary cases, the year of study must be spent at the University of Birmingham; but candidates desirous of pursuing some special line of study at some other British or foreign University may receive permission to do so on the recommendation of the Faculty.

University Fees.

		£	s.	d.
(i.)	Matriculation Examination	...	2	0 0
(ii.)	Intermediate Examination	...	3	0 0
(iii.)	B.Sc. or B.A.	... ..	4	0 0
(iv.)	M.Sc. or M.A.	... ..	5	0 0
(v.)	D.Sc., D.Phil. or D.Litt.	... ..	5	0 0

University Exhibitions.

Two exhibitions, not exceeding in value the sum of £30, tenable for one year, will be awarded on the results of the Intermediate Examinations in Science and Arts. The exhibitions will be tenable during the University Session immediately following the examinations, and will be paid solely in the form of remission of fees.

Two exhibitions, not exceeding in value the sum of £30, tenable for one year, will be awarded on nomination by the Faculties of Science and Arts, respectively, to undergraduates at the end of one year's course of study after passing the Intermediate Examination. These exhibitions will be tenable during the University Session immediately following their award, and will be paid solely in the form of remission of fees.

University Scholarships.

About four University Scholarships of the value of £50 a year, tenable for one year after graduation, may be awarded on the nomination of the Faculties of Science and Arts. These scholarships will carry with them free admission to lectures and laboratories in preparation for the Master's Degree.

Research Scholarships.

In addition to the Priestley and Bowen Research Scholarships, about four Research Scholarships of the value of £50 a year, tenable for one year, may be awarded on the nomination of the Faculties of Science and Arts. The scholarships will carry with them free admission to the Library and Laboratories of the University for the purposes of research. They will be held subject to the

good conduct and progress of the holders, at the discretion of the Faculty concerned.

Bowen Scholarships in Engineering.

Two Scholarships of the value of about £96 each, tenable for one year (except as hereafter mentioned), are awarded annually.

The objects of these scholarships is to encourage research in the scientific portions of engineering. The scholarships will be held under the condition that the holder devotes his whole time to research as a student in the University of Birmingham.

Candidates must have spent three years in the Engineering Department of a University College; preference will be given to candidates who hold an engineering degree.

In each year two scholarships will be offered tenable for one year, but in special cases where the scholar has shown considerable capacity for research work, the scholarship may be extended for a further year. The scholarships will be paid in quarterly instalments, and in the event of a scholar's attendance, diligence, or progress being at any time unsatisfactory, the subsequent instalments may be withheld.

The University Fee payable by Bowen Scholars will be £30 for the year, payable in three sums of £10 each at the commencement of the Winter, Spring, and Summer Terms, this sum to include the use of the ordinary apparatus and materials, as well as the purchase of such special apparatus and materials as the Professor shall consider desirable.

Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.

Priestley Scholarships in Chemistry,

*(Founded by the late T. Aubrey Bowen, Esq., of Melbourne.)
Three Scholarships of the value of about £96 each, tenable for one year (except as hereafter mentioned), are awarded annually.*

The object of these scholarships is to encourage and afford greater facilities for the higher study of chemical science at the University. As far as possible this higher study will take the form of original experimental or

theoretical investigation in some branch of Chemistry, pure or applied, to be carried on in the Laboratories of the University, under the direction of the Professor of Chemistry.

In the selection of candidates for these scholarships, preference will naturally be given to present or past students of the University, although outside candidates bearing the necessary credentials will also be eligible. As a general rule only such candidates as have passed through an approved three years' course of study in chemistry and the allied sciences will be accepted.

Under ordinary circumstances the scholarships will be tenable for one year, but the power is reserved of renominating for a second or third year in the event of such a course being considered desirable as tending to promote the object which the foundation of these scholarships has in view.

Priestley Scholars will be regarded as ordinary students of the University, and must conform to all the general rules of the University as well as to the special ordinances of the Chemical Department. The scholarships will be paid in quarterly instalments, and in the event of a scholar's attendance, diligence, or progress being at any time unsatisfactory, the subsequent instalments may be withheld.

The University Fee payable by Priestley Scholars will be £30 for the year, payable in three sums of £10 each at the commencement of the Winter, Spring, and Summer Terms, this sum to include the use of the ordinary apparatus and chemicals, as well as the purchase of such special apparatus and chemicals as the Professor shall consider desirable.

At the close of his year's tenure of the scholarship, or at any time previous thereto that the Professor may think fit, a scholar shall present the results of his work in the form of a thesis, the arrangements for the publication of which shall be left to the discretion of the University authorities.

Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.

Bowen Scholarship in Metallurgy

(Founded by the late T. Aubrey Bowen, Esq., of Melbourne.)

A Scholarship of the value of about £96, tenable for one year, is awarded annually.

This scholarship will be held on precisely similar terms to those laid down above for chemistry, the work engaged on by the scholar having a direct or theoretical bearing on some department of metallurgy. As the prosecution of this work may from time to time entail the visiting of works for the purpose either of personal observation or actual experiment, the Professor will be empowered to authorize the expense of such visits being either wholly or in part defrayed out of the above-mentioned fee paid by the scholar.

Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.

The Corbett Scholarship.

(Founded by John Corbett, Esq., of Impney, Droitwich.)

The Corbett Scholarship, of the value of about £28 a year, is tenable for one year, and is awarded to the student who is recommended to the Senate as the most promising and distinguished student in Mathematics at the end of his or her second year after registration.

Heslop Memorial Scholarship.

At a Public Meeting held at the Council House, Birmingham, on Friday, the 3rd of July, 1885, the following resolutions were unanimously passed:—

“That it is desirable to commemorate in some permanent form the long and valuable services rendered to the town of Birmingham, and especially to its Charitable and Educational Institutions, by the late Dr. HESLOP, and thus to place on record the public estimation of his character and labours.”

“That for the purpose mentioned in the previous resolution a subscription list be now opened, and that such subscriptions to the amount of £1,000 be applied to the formation of a Scholarship at the Mason College,

tenable by pupils from the Schools on the Foundation of King Edward VI."

The subscriptions obtained for the purpose of the foregoing resolutions, after deducting costs of advertising, &c., amounted to £755 19s. 0d., and the income arising therefrom (about £25 per annum) provides a Heslop Memorial Scholarship, which is awarded upon the following conditions:—

1. The Scholarship is open to all pupils who have been pupils in any of the Schools on King Edward's Foundation for not less than *two* years immediately preceding;

2. It is tenable for *two* years at the University;

3. It is awarded by the University on the result of the matriculation examination;

4. It is not tenable together with any other Exhibition or Scholarship awarded at the same examination;

5. It is paid solely in the form of remission of class fees.

Scholarships for holders of Birmingham School Board Scholarships.

The University annually awards free Scholarships to the Students entering the University as holders of Scholarships given by the Birmingham School Board, by remitting all fees for instruction.

The Scholarships are tenable at the University for *three* years, and at King Edward's School or the Technical School for such preceding period as may be necessary to fit the scholars to enter the University. The scholars must obtain from the Principal a written approval of the course of study they intend to pursue. The continuance of the Scholarships is at all times subject to satisfactory reports as to the fulfilment of the conditions under which they are held.

Science Research Scholarship

Awarded by Her Majesty's Commissioners for the Exhibition of 1851.

Her Majesty's Commissioners for the Exhibition of 1851 annually place at the disposal of the University the

nomination to a Science Scholarship of the value of £150 a year, tenable for two years, the continuation for the second year being dependent on the work done in the first year being satisfactory to the Scientific Committee appointed by the Commissioners. The student nominated must have studied in the University for three years at least, and must undertake to devote himself to scientific research or the application of scientific knowledge to industries. The scholarship may be held at any University at home or abroad, or in some other properly equipped institution to be approved of by the Commissioners. The nomination of candidates by the University is subject to revision by the Commissioners, and the privilege of nomination may be withheld by them at any time.

Applications should be made to the Registrar on or before the 25th of March.

PRIZES.

The Karl Dammann Memorial Prize.

The "KARL DAMMANN MEMORIAL PRIZE," of the value of about £5, founded by a friend of the late Dr. Karl Dammann, the first Professor of German Language and Literature in Mason College, is awarded annually to the best student in an examination in German Literature. The prize is given in the form of works in the German language.

The candidates must write an Essay in German upon a Literary Subject, to be announced by the Professor at an early date in each Session, and must pass an examination which will comprise a paper on the special Period of German Literature taken by the Professor in the preceding Session, and a *vivâ-voce* examination, in which the candidates will have to translate at sight from some of the authors and answer questions relating to them.

The Panton Geological Prize.

The "PANTON PRIZE," of the value of Two Guineas—presented by G. A. Panton, Esq., F.R.S.E.—is awarded

to the best student in the class of Local Geology : the prize being given upon the result of a competitive examination upon the Geology of the neighbourhood of Birmingham, or as a reward for a special thesis upon the Geology of the Birmingham District.

Bunce Prize.

The "BUNCE PRIZE," of the value of about £3, founded by the late J. Thackray Bunce, Esq., is awarded annually on the result of a special examination held in the month of June.

Subjects of Examination for June 1901 :—

(a) The Works of Shakspeare.

(b) Shaksperian Criticism.

Candidates should send in their names to the Registrar on or before June 1st, 1901.

Gladstone Memorial Prize.

The Committee of the Gladstone Memorial Fund offers annually to students of the University a prize of books, of the value of £5, for an Essay on a subject connected with History, Political Science, or Economics.

Candidates are recommended to consult the Professors of English and Philosophy as to the proposed subject for the essay.

The exercises should be sent in to the Registrar on or before June 1st.

GOLD MEDALS.

The Heslop Memorial Medal.

The "HESLOP GOLD MEDAL," provided out of the proceeds of a bequest to the College by the late Thomas Pretious Heslop, Esq., M.D., is awarded annually by the University, on the recommendation of the Senate, for the best Dissertation or Essay upon a subject to be selected by the candidate. The Medal is open to all past and present students of not less than two years' standing.

The subjects are arranged in the following divisions:—

- a.* Language, Literature, and Philosophy.
- b.* Mathematical and Physical Science, including Metallurgy and Engineering.
- c.* Biological and Geological Science, including Mining.

The award will be in division *c* for 1901, *a* for 1902, and *b* for 1903.

Candidates are at liberty to select any subject under the above headings, and are advised to consult their Professors in making their choice.

The essays must be sent in to the Registrar under a motto, not later than the 30th of April, accompanied by a sealed envelope, with the motto outside, containing the name of the candidate. The exercise should not be in the handwriting of the candidate.

If in any year the Medal be not awarded it may be offered again in the following year in the same group of subjects, in addition to the Medal naturally offered for that year in another group, and so on until the completion of the cycle of subjects.

The Constance Naden Medal.

The "CONSTANCE NADEN GOLD MEDAL," founded by Surgeon Lieut.-Colonel R. Lewins, M.D., in memory of the late Miss Constance Caroline Woodhill Naden, is awarded annually by the University, on the recommendation of the Senate, for the best exercise under one of the following headings:—

- a.* An English Poem.
- b.* A dissertation on a literary subject.
- c.* A dissertation on any subject relating to mental and moral science.
- d.* An examination of any of the fundamental principles or axioms of science, with their bearings upon modern thought.

The competition for the medal is open to all present or past students of the University, who have attended systematic courses during two sessions.

The exercises must be sent in to the Registrar, under a motto, not later than the 30th of April, accompanied by a sealed envelope, bearing the motto, and containing the name of the candidate. The exercise should not be in the handwriting of the candidate.

GOVERNMENT AID TOWARDS THE INSTRUCTION OF SCIENCE TEACHERS.

In accordance with a minute adopted by the Right Honourable the Lords of the Committee of Her Majesty's Most Honourable Privy Council on Education, June, 1881 (Science Form, No. 1,126), their Lordships are prepared to pay three-fourths of the fees for courses of laboratory instruction, as stated below, for a limited number of Teachers engaged in Science Teaching, on condition that satisfactory reports of their progress (to be ascertained by examination), and of their conduct, be received at the end of the Winter, Spring, and Summer Terms.

Applications for this privilege must be made to the Secretary, Board of Education, South Kensington, London, S.W., not later than the 31st August.

The selection of the applicants will rest with the Board of Education.

The fees for two days a week for the Session, from October to June, are :—

*For the Chemical or Metallurgical	£	s.	d.
Laboratories	9	9	0
*For the Physical Laboratory	7	7	0
*For the Biological Laboratories..	7	7	0

NOTE.—One-fourth of the fee for the whole Session must be paid by the Student on entrance, under the usual conditions of the University. The remaining three-fourths of the fee will be paid by the Board of Education, in equal instalments, at the commencement of each term subject, however, to the right of the Board to withhold payment of the second and third instalments should the reports not be satisfactory.

* Including such of the Lectures as the Teachers are able and willing to attend.

SYLLABUS

OF

University Courses

IN THE FACULTIES

OF

SCIENCE AND ARTS.

MATHEMATICS.

Professor : R. S. HEATH, M.A., Cantab., D.Sc., Lond.,
late Fellow of Trinity College, Cambridge.

Lecturer : W. H. AUSTIN, B.A., Cantab. et Lond.,
Scholar of Trinity College, Cambridge.

PURE MATHEMATICS.

LECTURE COURSES.

I.

Mondays and Fridays, from 12.30 to 1.30.

Tuesdays and Thursdays, from 11.30 to 12.30.

ALGEBRA.—Elementary properties of surds and imaginaries; simultaneous quadratics and equations like quadratics; ratio, proportion and variation; arithmetical and geometrical progressions, and other simple series; theory of indices; theory and practical applications of logarithms; permutations and combinations; the binomial theorem for a positive integral exponent.

TRIGONOMETRY.—Trigonometrical ratios of acute angles; solution of right-angled triangles, and simple problems of heights and distances; circular measure of angles; length of arcs of circles; angles of any magnitude and sign; trigonometrical ratios of obtuse angles; sine, cosine, and tangent of the sum and difference of angles; formulæ for the ratios of the double angle, triple angle, and the half angle; transformation of sums and differences of sines and cosines into products, and vice-versâ; properties of triangles; solution of triangles; problems on heights and distances; the chief circles related to a triangle; regular polygons; areas of circles, sectors, and segments.

GEOMETRY.—The substance of Euclid, Books VI. and XI., 1—21, together with properties, areas of surface, and volumes of polyhedra, cylinders, cones, and spheres; elementary theory of projection and perspective.

FEE :—£4 4s.

II.

Mondays, Tuesdays, Thursdays, and Fridays, from 9.30 to 10.30.

ALGEBRA.—Theory of quadratic functions and quadratic fractions, their graphs and maxima and minima values; the remainder and factor theorems of rational functions; theory of rational and partial fractions; the convergence and properties of the binomial, exponential and logarithmic series.

TRIGONOMETRY.—Inverse notation; graphs of the trigonometrical functions; theory of complex quantities; Argand's diagram and De Moivre's theorem; series for sine and cosine and calculation of tables; exponential forms of sine and cosine; hyperbolic functions; Gregorie's series; calculation of π .

GEOMETRY.—The elementary properties of conic sections.

DIFFERENTIAL CALCULUS.—Methods of differentiation; Taylor's and Maclaurin's theorems; theory of maxima and minima.

INTEGRAL CALCULUS.—Methods of integration; calculation of curve lengths, areas and volumes by single integration.

FEE:—£4 4s.

III.

Mondays, Tuesdays, Thursdays, and Fridays, from 9.30 to 10.30.

ANALYTICAL GEOMETRY up to the elementary properties of the conic sections.

DIFFERENTIAL CALCULUS.—Tangents, normals, asymptotes, singularities of curves; tracing of curves; properties of special curves (including sine-curve, logarithmic curve, cycloids and catenary).

INTEGRAL CALCULUS.—Formulae of reduction; differentiation and integration of an integral with regard to constants; properties of special curves; double and triple integration.

DIFFERENTIAL EQUATIONS.—Standard forms; singular solutions; linear and homogeneous equations with constant coefficients; special equations commonly occurring in dynamical and physical problems.

FEE:—£4 4s.

APPLIED MATHEMATICS.

LECTURE COURSES.

I.

Mondays, Tuesdays, Thursdays, and Fridays, from
10.30 to 11.30.

STATICS.—The theory of the composition and resolution of forces; the theory of moments; parallel forces and couples; equilibrium of bodies under the action of forces in one plane; force-diagrams and link-polygons; centres of gravity; the simpler machines, balances, pulleys, screw-jacks, &c.; friction and its effects in the working of machines; theory of work and efficiency of machines; statics of jointed frame-works.

DYNAMICS.—Definition, measurement, and properties of velocities and accelerations; measurement of momentum and force; work and energy; motion of a body under the action of a force which is constant in magnitude and direction, including the motion of projectiles; theory of impacts; uniform circular motion; harmonic oscillations; the simple pendulum; theory of dimensions of dynamical quantities; change of units.

HYDROSTATICS.—Equilibrium of liquids under the action of gravity; pressures of liquids on plane areas and on solid bodies, partially or wholly immersed; Boyle's and Charles' laws of gases; hydrostatic machines, such as presses, barometers, pumps, &c.

FEE :—£4 4s.

II.

Mondays, Tuesdays, Thursdays, and Fridays, from
10.30 to 11.30.

STATICS.—Continuation of the subjects of the Course I. and more difficult applications; application of integral calculus to the determination of centres of gravities; stability; equilibrium of strings; small curvatures of flexible beams.

DYNAMICS OF A PARTICLE.—Application of differential and integral calculus to the measurement of velocities and accelerations; motion of chains under the action of gravity; motion under central forces; motions of particles on fixed curves.

RIGID DYNAMICS.—Moments of inertia; motion of a rigid body about a fixed axis; theory of impacts and centres of percussion; theory of angular momentum and kinetic energy; motions of bodies in two dimensions under the action of given forces.

HYDROSTATICS.—Metacentres, stability and small oscillations of floating bodies.

FEE :—£4 4s.

HIGHER MATHEMATICS.

Classes will be arranged in more advanced mathematics, if sufficient demand for such instruction is forthcoming.

REQUIREMENTS FOR DEGREES.

Intermediate Examinations in Science and Arts:—

Course I.

B.Sc. Degree:—

(i.) Mathematics as a Principal Subject:—

Courses II and III in Pure, and Courses I and II in Applied Mathematics.

(ii.) Mathematics as a Subsidiary Subject:—

One of the following combinations:

(a) Courses II and III in Pure Mathematics.

(b) Courses I and II in Applied Mathematics (for students who know sufficient pure mathematics.)

(c) Course II in Pure and Course I in Applied Mathematics.

B.A. Degree:—

(i.) (When Mathematics is taken for two years). The same combinations as for Subsidiary Mathematics for B.Sc. Degree.

(ii.) (When taken for one year only). Course II in Pure Mathematics or Course I in Applied Mathematics.

TIME TABLE.

MATHEMATICS.	Mon.	Tues.	Wed.	Th.	Fri.
PURE—					
Course I.	12.30	11.30	...	11.30	12.30
" II.	9.30	9.30	...	9.30	9.30
" III.	9.30	9.30	...	9.30	9.30
APPLIED—					
Course I.	10.30	10.30	...	10.30	10.30
" II.	10.30	10.30	...	10.30	10.30

PHYSICS.

Professor: J. H. POYNTING, Sc.D., Cantab., F.R.S., late
Fellow of Trinity College, Cambridge.

Lecturer: GEO. E. ALLAN, B.Sc., Lond.

Assistant Lecturer: G. A. SHAKESPEAR, B.A., B.Sc.

LECTURE COURSES.

I.

Lecture Hours.—Mondays, Wednesdays, and Fridays,
from 11.30 to 12.30.

Practical Class.—Wednesdays, from 2 to 4.

Position, Velocity, and Acceleration always relative to a standard. Effect of change of standard. Resolution and Composition of Velocities and Accelerations. Uniform Motion in a circle. Conical Pendulum. Determination of g . Gravitation. Dimensions and Mass of the Earth.

PROPERTIES OF MATTER.—*Solids*: Sticking and sliding friction. Strains and Stresses. Bulk Strain and Shear Strain. Various kinds of permanent change of shape and rupture. Crystalline and Amorphous Solids. *Liquids*: Viscosity. Compressibility. Surface Tension. *Gases*: Compressibility. Viscosity. Kinetic Theory of Matter. Diffusion. Solution. Osmotic Pressure.

HEAT. — Temperature. Mercury-in-glass thermometer. Determinations of high and low temperatures. Expansion of solids and liquids. Circulation and Convection in Liquids. Expansion of gases at constant pressure and increase of pressure at constant volume. Gas thermometer. Circulation and Convection in gases. Movements of the Atmosphere. Quantity of Heat. Specific Heat and simple methods of measuring it. Conduction of Heat. Conductivity. Heat a form of Energy. The forms of Energy and their transformations according to fixed rates of exchange. The Conservation of Energy. Methods of determining the Mechanical Equivalent of Heat. The nature of Heat on the Kinetic Theory of Matter. Limitation in the amount of heat which can be transformed to work. Change of State. Latent Heat. Liquid-Vapour Change.

Evaporation. Boiling. Vapour Pressure. Dependence of boiling point on Pressure, and explanation. Modes of measuring Vapour Pressure. Explanation of Vapour Pressure on the Kinetic Theory. Water Vapour in the Atmosphere. Hygrometers. Cloud. Fog. Dew. Solid-Liquid Change. Melting Point. Change of volume on melting. Effect of pressure on Melting Point. Regelation. Radiation. High and Low Radiating and Absorbing Powers. Comparison of properties of radiation from hot bodies and properties of light. Identification. The Spectrum. Substances absorb the radiations which they can emit. Dark lines in Solar and Stellar Spectra.

LIGHT.—Light a form of Energy. Rectilinear Propagation. Shadows. Eclipses. Inverse Square Law. Simple Photometers. Reflection. Refraction and Dispersion. Velocity of Light. Light a form of Wave Motion. Illustrations of Interference. The Diffraction Grating. Polarisation of Light. Mirrors. Prisms. Lenses. The Eye. Simple forms of Telescope and Microscope.

SOUND.—Sound arises from vibrating sources which send out longitudinal waves in air. Characteristics of the waves, corresponding to Loudness, Pitch and Quality, Velocity of Sound in air, and other media. Determinations of Frequency. Resonance. Its use to analyse sounds. Harmonies and Upper Partials. Quality. Transverse Vibrations of Strings. Vibrations of air in Pipes. Other vibrating sources. Beats. Concord and Discord. Combination Tones.

MAGNETISM.—Properties of Magnets. The two poles, their equality and inseparability. Magnetism by Induction. Methods of making Magnets. Inverse Square Law. Magnetic Fields and Lines of Force. Strength of poles and Moments of Magnets. The Earth as a Magnet. Declination Dip and Intensity. Magnetic Properties of different substances. Temperature and Magnetic Qualities.

ELECTRICITY.—The two kinds of Electrification and simple modes of producing them. Conductors and Insulators. The Gold Leaf Electroscope. Electrification by Induction. Frictional Electrical Machines. The Electrophorus. The Wimshurst Machine. The Leyden Jar. Production and Disappearance of the two Electrifications, always in equal quantities. The Electric Field considered respectively as the seat of Electric Strain. Electric Forces and Electric Energy. The Inverse Square Law. The Unit of Charge. Potential, Capacity, and Energy of Charge. Electrometers. The effect of the medium. Specific Inductive Capacity.

ELECTRO-MAGNETISM.—Electric Discharge and the Magnetic Effects accompanying it. Electro-magnetic Waves. Electric Current. Voltaic and Storage Cells. The Magnetic Properties of the Current Circuit. The Ampere. Galvanometers and Ampere Meters. The Forces on Current Circuits in a Magnetic Field. Electric Motors. Ohm's Law. Resistance. The Heat developed in the Circuit. Joule's Law. The Ohm. The Volt. Electrolysis. Electro-chemical equivalents. Thermo-electricity. The Induction of Currents. Lenz's Law and Faraday's Law. The Dynamo. The Induction Coil. The Transformer.

FEE:—£5 15s. 6d.

II.

This Course extends over two years.

Lecture Hours.—Mondays, Wednesdays, and Fridays, from 4 to 5.

Laboratory Hours.—Six, nine, or twelve hours weekly, by arrangement.

MECHANICS.—Simple Harmonic Motion. Simple Pendulum. Motion of a body round a fixed Axis. Compound Pendulum. Methods of determining relative and absolute values of *g*. Ballistic Pendulum. Gravitation. Methods of determining *G*.

PROPERTIES OF MATTER.—*Solids*: Friction. Moduli of Elasticity and methods of determining them. *Liquids*: Viscosity. Bulk Modulus of Elasticity. Surface Tension. *Gases*: Viscosity. Compressibility. Kinetic Theory of Gases. Molecular Dimensions.

HEAT.—The Laws of Thermodynamics. Absolute Scale of Temperature. Volume-pressure and Entropy-temperature Diagrams and their use. Solution. Osmotic Pressure. Exact Measurements in Heat.

MAGNETISM AND ELECTRICITY.—General propositions with regard to an inverse square field of force. *Magnetism*: Magnetic Measurements. The Earth's Field. Paramagnetism and Diamagnetism. Theory of the Magnetic Field. *Electrical*: Theory of the Electric Field. Electric Measurements. *Electro-magnetism*: Electric Discharge. Magnetic Properties of Current Circuits. Heating Effects. Chemical Effects. Thermo-electricity. Current Induction. Electro-magnetic Measurements. Theory of the Electro-magnetic Field.

LIGHT.—Photometry. Mirrors. Prisms. Lenses. Dispersion. Achromatic Combinations. Optical Instruments. Wave Theory. Interference. Diffraction. Polarisation by Reflection and Refraction. General account of Polarisation by Crystals. Circular and Elliptic Polarisation. Rotation of Plane of Polarisation. Polarimeters.

SOUND.—Nature of Sound Waves in Air. Velocity of Sound. Measurements of Frequency. Forced Vibrations. Analysis of Waves. Strings. Pipes. Maintenance of Vibrations. Interference of Sound. Waves. Beats. Concord and Discord. Combination Tones.

FEE:—£3 13s. 6d. per Session.

LABORATORY FEE:—Six hours per week, £4 4s., and for each additional three hours, £1 1s.

REQUIREMENTS FOR DEGREES.

Intermediate Examination in Science:—

Course I.

B.Sc. Degree:—

Course II, extending over two academic years.

TIME TABLE.

PHYSICS.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	11.30	...	11.30	...	11.30
Practical. ....	...	...	2-4	...	...
Course II.	4.0	...	4.0	..	4.0
Practical.. ....	...	<i>(By arrangement.)</i>			...

CHEMISTRY.

Professor : PERCY F. FRANKLAND, Ph.D., B.Sc., F.R.S.

Lecturer : C. F. BAKER, Ph.D., B.Sc.

Demonstrator : W. R. INNES, M.Sc., Ph.D.

LECTURE COURSES.

I.

A. This part of the course is arranged (1) to give a full exposition of the general principles of Chemical Science, (2) for the systematic study of the properties of the more important elements and their compounds, and (3) to indicate the chief applications of Chemistry in the Arts and Manufactures.

Five hours weekly during the Winter and Spring Terms. At least one of the above meetings of the class in each week will be devoted to tutorial work. Attendance at this tutorial class is compulsory, as is the performance of the weekly exercises set by the Professor.

Lecture hours.—9.30 to 10.30 a.m. on Mondays to Fridays inclusive.

FEE:—£5 5s.

B. This part of the course includes an introduction to the study of Organic Chemistry, with a description of the properties, relations, and methods of preparation of the more important groups of Carbon-compounds.

Three hours weekly during the summer term.

Lecture hours.—9.30 to 10.30 a.m. on Mondays, Wednesdays, and Fridays.

FEE:—£1 11s. 6d.

II.

A. *Advanced Organic Chemistry*.—This course extends over two years, and is divided into two parts:—

(a) Carbon-compounds of the Fatty Series.

(b) Aromatic and other Cyclic Compounds.

Only one of these parts will be taken in each year. The class meets twice weekly by arrangement during the Winter and Spring Terms.

B. *General and Physical Chemistry.*—The course will deal in outline with the following:—

Methods of expressing the results of observations: curves and formulæ.

Characteristic properties of gases, liquids, and solids. Other properties of matter, especially molecular volume, heat, refraction equivalent, and rotation; their relation to constitution.

Dilute solutions and their analogy with gases; their osmotic and vapour pressures, their boiling and freezing points.

Aqueous solutions: electrolysis and the electrolytic dissociation theory; rate of migration, conductivity and difference of potential.

Relations between the quantities of reacting substances; molecular and atomic weights; the periodic law.

Velocity of chemical action; reactions of various orders. Chemical equilibrium; homogeneous equilibrium and the law of mass action; heterogeneous equilibrium and the phase rule.

Energy of chemical systems; thermochemistry.

Thermodynamics; its application to certain elementary cases in chemistry and electrochemistry.

The kinetic theory.

The class meets once weekly by arrangement during the three terms.

FEES:—For Course A, £2 2s. 0d.

For Course B, £1 11s. 6d.

III.

A. *Advanced Organic Chemistry.*—One of the above parts of the course.

The Class meets two hours weekly by arrangement during the Winter and Spring Terms.

B. General and Physical Chemistry.—Short courses on special subjects attracting attention at the time.

FEES :—For Course A, £2 2s. 0d.

For Course B, £1 11s. 6d.

PRACTICAL CHEMISTRY.

I.

Not less than nine hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Preparation of pure substances, gaseous, liquid, and solid.

Experiments illustrating the laws of combination.

Simple qualitative analysis, simple gravimetric and volumetric determinations.

II.

Not less than fifteen hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Advanced qualitative and quantitative analysis.

Simple organic preparations.

III.

Not less than fifteen hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Gas analysis, molecular weight, and other physical determinations.

Advanced organic preparations.

LABORATORY PRACTICE.

The Laboratory will be open daily from 9.30 to 5, except on Saturdays, when it will be closed at 1 p.m.

Each Student will pursue an independent Course of study to be determined after consultation with the Professor. He will be guided in his operations by the Professor or his Assistants.

TEXT BOOKS.—Newth's Manual of Chemical Analysis, Qualitative and Quantitative (Longmans); Fresenius' Qualitative Analysis (Churchill); Fresenius' Quantitative Analysis (Churchill); Sutton's Volumetric Analysis (Churchill).

FEES:—

	All day.	Three hours per day.	Three hours per day ; five days a week.	Three hours per day ; three days a week.
	<i>Guineas.</i>	<i>Guineas.</i>	<i>Guineas.</i>	<i>Guineas.</i>
One Term ...	7	4½	4	2½
Two Terms ...	13	8½	7½	5
Three Terms...	18	12	11	6½

Each student will be required to provide himself with a set of simple apparatus, the total cost of which need not exceed 30s. A few sets may be hired at the Laboratory store for a charge of 7s. 6d. each.

Gas, water, and all ordinary reagents (except methylated spirit, ether, chloroform, silver nitrate and platinum perchloride) are supplied by the University, and the larger forms of apparatus may be obtained on loan from the Laboratory store, on condition that breakages are made good.

Some of the special chemicals required for organic preparations have to be purchased by the Student.

Some additional Apparatus will also be required by each Student upon commencing QUANTITATIVE ANALYSIS.

Special arrangements are made by the Professor for students pursuing Research.

PRACTICAL CLASS.

For Laboratory Students.

A Class for exercises will be held by the Professor or one of his Assistants once a week. All first-year Students will be required to attend, unless exempted for special reasons by the Professor.

No Fee.

Excursions.

During previous Sessions permission has been obtained to visit some of the great factories in and near Birmingham, in which chemical and metallurgical industries are carried on. Students have thus had most valuable opportunities of gaining a practical acquaintance with some branches of Applied Science. The privilege thus courteously granted by several manufacturers will, it is hoped, be enjoyed in every future Session. The excursions will be conducted by the Professor.

REQUIREMENTS FOR DEGREES.

Intermediate Examination in Science :—

Lectures, Course I. (A and B.)

Laboratory, Course I.

B.Sc. Degree :—

(i.) Chemistry as a principal subject :

Lectures, Courses II and III.

Laboratory, Courses II and III.

(ii.) Chemistry as a subsidiary subject :

One of the following combinations :

(a) Lecture Courses II and III in Organic Chemistry, with not less than fifteen hours weekly in the Laboratory during three terms.

- (b) Lecture Courses II. and III. in General and Physical Chemistry, with not less than fifteen hours weekly in the Laboratory during three terms.

B.A. Degree :—

Lecture Course I., with not less than nine hours' Laboratory work weekly.

TIME TABLE.

CHEMISTRY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I. (A.)	9.30	9.30	9.30	9.30	9.30
Course I. (B.)	9.30	...	9.30	...	9.30
Course II.	} ...	(By arrangement)			...
Course III.					

ZOOLOGY AND COMPARATIVE ANATOMY.

Professor: T. W. BRIDGE, Sc.D., Cantab., F.L.S.

Lecturer and Demonstrator: WALTER E. COLLINGE, F.Z.S.

Museum Assistant: F. W. CRISPE.

LECTURE COURSES.

I.

Lecture Days:—Tuesdays and Thursdays, at 12.30, during the Winter and Spring Terms, and on Tuesdays in the Summer Term.

A course of about fifty lectures on Elementary Zoology.

A. Living and non-living matter.—Distinctive properties of living matter or protoplasm, as illustrated by the study of the Proteus animalcule or *Amœba*.—Distinction between Animals and Plants.—Comparison of the unicellular *Amœba* with the complex multicellular Frog.—Origin of the Frog. The egg-cell or ovum.—Segmentation of the ovum, and the subsequent formation of physiologically different groups of cells or tissues. Structure of the various elementary tissues of the Frog. Epithelia, connective, muscular, and nervous tissues. The combination of tissues to form organs.

B. The anatomy and histology of the various systems of organs in the Frog, and the elementary physiology of the organs of digestion, circulation and excretion. Physiological division of labour and morphological differentiation of structure.

C. This part of the course will treat of the structure of the following typical animals, viewed from a comparative standpoint:—

The Proteus-Animalcule (*Amœba*), the Bell-animalcule (*Vorticella*), the freshwater Polype (*Hydra*), the Earthworm (*Lumbricus*), the Crayfish (*Astacus*), the freshwater Mussel (*Anodonta*), the Dog-fish (*Scyllium*), the Frog (*Rana*), and including the general structure of the Rabbit (*Lepus*).

D. The concluding lectures of the course will deal with the phenomena of Asexual and Sexual reproduction. Parthenogenesis, Ova and Spermatozoa. Spermatogenesis. Fertilization and Segmentation of the ovum in *Amphioxus* and *Rana*. The development and larval history of the Frog, treated in an elementary fashion.

Practical Class.

In the Practical Class, which will be conducted in connexion with this course, the above-mentioned animal types will be dissected or microscopically examined.

Laboratory.:—Tuesday and Thursday afternoons, from 2 to 4.30, in the Winter and Spring Terms, and on Tuesday afternoons during the Summer Term.

FEE.:—For lecture and laboratory courses, £4 4s.

II.

Lecture Days.:—Mondays, Wednesdays, and Fridays, at 12.

A course of about ninety lectures will be given during the Session on General Zoology. The course includes a more or less detailed description of the Morphology and Embryology of selected examples of the principal groups of animals, and of the more important modifications of structure which are met with within the limits of each group. The Phylogenetic relations of each group will also be discussed, as well as the more elementary facts of its Geographical Distribution and Bionomics.

SYLLABUS OF GROUPS AND TYPICAL EXAMPLES.

PHYLA.

EXAMPLES.

PROTOZOA.

(i.) Rhizopoda	<i>Amœba, Gromia, Miliola,</i> <i>Globigerina, Actinophrys, Thalassioella.</i>
(ii.) Mycetozoa	<i>Fuligo.</i>
(iii.) Mastigophora	<i>Monas, Codonisa, Ceratium.</i> <i>Nautiluca.</i>
(iv.) Ciliata	<i>Paramecium, Stentor.</i>
(v.) Acinetaria	<i>Acineta.</i>
(vi.) Sporozoa	<i>Monocystis, Coccidium.</i>

PORIFERA.

(i.) Calcarea	<i>Ascutta, Sycon.</i>
(ii.) Non-calcarea	<i>Spongilla, Euspongia.</i>

CÆLENTERATA.

EXAMPLES.

- (i.) Hydrozoa *Tubularia, Obelia, Car-*
marina, Physophora,
Millepora.
- (ii.) Scyphozoa..... *Aurelia.*
- (iii.) Anthozoa—
- (a) Alcyonaria *Alcyonium, Gorgonia.*
- (b) Zoantharia *Actinia, Edwardsia,*
Flabellum.
- (iv.) Ctenophora *Pleurobrachia.*

PLATYHELMINTHES.

- (i.) Turbellaria *Convoluta, Polycelis, Den-*
drocalum, Leptoplana.
- (ii.) Trematoda..... *Distomum.*
- (iii.) Cestoda *Tænia.*

NEMERTEA *Carinella, Cerebratulus.*

ANNELIDA.

- (i.) Archiannelida *Polygordius.*
- (ii.) Chaetopoda *Nereis, Lumbricus.*
- (iii.) Hirudinea..... *Hirudo.*

ROTIFERA *Brachionus, Milicerta,*
Pedalion.

PHYLA.

POLYZOA.

- (i.) Entoprocta *Loxosoma.*
- (ii.) Ectoprocta..... *Bugula.*

BRACHIOPODA *Waldheimia, Lingula.*

MOLLUSCA.

- (i.) Pelecypoda *Nucula, Mytilus, Ano-*
donta.
- (ii.) Gastropoda—
- (a) Isopleura *Chiton.*
- (b) Anisopleura *Patella, Haliotis, Buccinum*
Carinaria, Aplysia,
Clione, Helix.
- (iii.) Scaphopoda *Dentalium.*
- (iv.) Cephalopoda..... *Nautilus, Sepia.*

ARTHROPODA.

- (i.) Crustacea *Apus, Daphnia, Cyclops,*
Lepas, Nebalia, Astacus.
- (ii.) Arachnida..... *Limulus, Scorpio.*
- (iii.) Onychophora *Peripatus.*
- (iv.) Myriapoda *Scolopendra, Julus.*
- (v.) Insecta *Periplancta.*

ECHINODERMATA.

EXAMPLES.

- | | |
|-----------------------------|---------------------------|
| (i.) Crinoidea | <i>Antedon.</i> |
| (ii.) Holothuroidea | <i>Holothuria.</i> |
| (iii.) Stelleroidea | <i>Asterias, Ophiura.</i> |
| (iv.) Echinoidea | <i>Echinus.</i> |

CHORDATA.

- | | |
|--------------------------------|--|
| (i.) Hemichorda | <i>Balanoglossus.</i> |
| (ii.) Urochorda | <i>Appendicularia, Ascidia,</i>
<i>Pyrosoma, Salpa.</i> |
| (iii.) Cephalochorda | <i>Amphioxus.</i> |
| (iv.) Craniata [Vertebrata]. | |
| (a) Cyclostomata | <i>Petromyzon, Myxine.</i> |
| (b) Pisces | <i>Scyllium, Chimaera, Poly-</i>
<i>pterus, Gadus, Cera-</i>
<i>todus.</i> |
| (c) Amphibia | <i>Rana. Triton.</i> |
| (d) Reptilia | <i>Lacerta, Chelone, Boa,</i>
<i>Crocodylus.</i> |
| (e) Aves | <i>Struthio, Columba.</i> |
| (f) Mammalia | <i>Echidna, Macropus,</i>
<i>Lepus.</i> |

Laboratory Course.

In the practical class, which will be conducted in connection with this course, a selection of the above-mentioned animal types will be dissected and microscopically examined.

FEE:—For lectures and laboratory course, £6 6s.

III.

Lecture Days:—Mondays and Fridays, at 10.30, or at such times as may be fixed by arrangement with the class.

A series of short lecture courses, amounting in the aggregate to about sixty lectures, will be given during the Session on such branches of Zoology as, for example:—

The Morphology and Phylogeny of certain special groups of organisms.

The distribution of animals in space and time. Zoogeographical regions.

Characters of Pelagic, Littoral, Deep Sea, Island, and Terrestrial faunas.

Hereditary and Variation.

Biological theories, including the history of Evolutionary ideas.

FEE:—Lectures, £2 12s. 6d.; Laboratory (six hours weekly) £6 6s.

Zoological Laboratory.

The Laboratory will be open daily, from 10 to 5 (Saturdays, 10 to 1). In addition to students taking up practical work in connection with the various lecture courses, the Laboratory will be open to all who may desire to engage in any special course of practical work, or to pursue original investigations, with a view to the requirements for the higher University Degrees of M.Sc. and D.Sc.

LABORATORY FEE :—£2 2s. per term.

REQUIREMENTS FOR DEGREES.

*Intermediate Examination in Science :—*Course I in the first year.

B.Sc. Degree :—

- I. Zoology as a Subsidiary Subject : Course II in the second year.
- II. Zoology as a Principal Subject : Course II in the second year, and Course III, with at least six hours laboratory work weekly, in the third year.

*B.A. Degree :—*Course II.

M.Sc., D.Sc.—Students who have taken the degree of B.Sc., and who desire to proceed to the higher University degrees of M.Sc. and D.Sc., may confer with the Professor as to the choice of a subject for the thesis (M.Sc.), or for original research (D.Sc.).

TIME TABLE.

ZOOLOGY.	Mon.	Tues.	Wed.	Thur.	Fri.
Course I. ....	...	12.30	...	12.30	...
Course II.	12.0	...	12.0	...	12.0
Course III.	10.30	...	...	...	10.30
Laboratory	Daily from 10 to 5				

BOTANY AND VEGETABLE PHYSIOLOGY.*Professor :* W. HILLHOUSE, M.A., Cantab., F.L.S.*Lecturer :* WALTER E. COLLINGE, F.Z.S.*LECTURE COURSES.***I.**

The Morphology of the Seed ; Germination ; the external morphology of the Seedling. The physiology of germination ; the general nature of the reserve food-stuffs ; the relations of the seedling with external conditions and natural forces ; the theory of irritability. Growth to exhaustion, and the general conditions of active life and of self-nutrition.

The general morphology of the Plant Body, and the principal modifications in form or distribution of the vegetative members, Root, Shoot, and Leaf.

The Living Principle of the plant—Protoplasm ; the Cell, and its principal modifications for special purposes ; evolution and distribution of the Tissues, considered especially from a biological standpoint. The Leaf as a bio-anatomical study ; epidermis, vascular bundles, ground-tissue.

The internal morphology of the Stem in its chief modifications ; the results of cambial activity ; the secondary protective tissues, Cork and Bark. The Root.

The Bud ; the principal characteristics of increase in length in shoot and root.

The phenomena of climbing, and illustrations of special powers of movement. Amplification of the theory of 'irritability.'

The elementary facts in the Nutrition of the plant, including the nature and sources of the raw materials of food, and the constitution of soil ; Absorption and the Transpiration current ; the nature and functions of Chlorophyll ; the broad principles of metabolism, and the

distribution, storage, and utilisation of its products. Respiration. Nutrition without chlorophyll and fermentative changes, illustrated by Yeast, Bacteria and *Pythium*. Degrees of Parasitism in Flowering Plants. Insectivorous Plants.

Reproduction, Sexual and Asexual. The primary divisions of the Vegetable Kingdom, viz. :—Thallophyta (illustrated by *Spirogyra*, *Fucus*, and *Agaricus*), Bryophyta (a moss-plant); Pteridophyta (a fern-plant); and Phanerogamia (flowering plants).

The general character and structure of the reproductive organs in Phanerogamia; pollination, and its methods; fertilisation; the development of the seed and the fruit; seed protection and dispersal.

The Flower, and its chief modifications in structural plan, as illustrated in the following Natural Orders of the British Flora, viz. :—Ranunculaceæ, Cruciferae, Violaceæ, Caryophyllaceæ, Leguminosæ, Rosaceæ, Umbelliferae, Compositæ, Primulaceæ, Scrophularineæ, Labiatae, Cupuliferae, Liliaceæ, Orchidaceæ; and the description of plant specimens in semi-technical language.

The chief principles of Geographical Distribution, mainly as illustrated by Mountain and Island Floras. Sketch of the Theory of Evolution.

Lecture Days.—Mondays and Fridays at 2.30.

Laboratory.—The course will be illustrated by work in Morphology, internal and external, and Physiological experiments, to follow each Lecture, or, *as an alternative*, on Saturdays at 10.30.

Botanical Excursions. A few will be arranged for Saturday afternoons in the Summer Term, and will be concerned with the Local Flora in its environment relations; as *e.g.* Moor, Marsh and Bog; Meadow and Riverside; Woodland, Hedgerow, and Climbers; Roadside and cultivated ground.

FEE :—Lectures and Laboratory, £4 4s.

II.

Internal Morphology and Histology (vegetative). The Cell; its structure and modifications, and the processes of cell-formation. The Tissues and Tissue-systems as met with in stem, root, and leaf; Meristems, and origins of the Tissues.

Physiology. Nutrition; the processes of absorption of water and dissolved substances and their distribution; Root-pressure; Transpiration.

The Metabolic Processes. Respiration.

The Phenomena of Growth and Movement; Irritability; the transmission of stimuli and the mechanism of movement.

The special physiology of reproduction, vegetative, asexual and sexual, including the structure and development of the chief reproductive organs. Heredity, Variation, Evolution.

Life History and the Classification of Plants. The morphology and physiology of the chief groups of the Vegetable Kingdom and their most important sub-divisions, viz. :—

Thallophyta.

Myxomycetes, Cyanophyceæ, Schizomycetes, Diatomaceæ, Conjugatæ, Chlorophyceæ, Phæophyceæ, Rhodophyceæ, Characeæ, Hyphomycetes, Lichenes.

Bryophyta.

Hepaticæ, Musci.

Pteridophyta.

Filices, Hydropterideæ, Equisetaceæ, Lycopodiaceæ, Selaginellaceæ.

Phanerogamia (Spermophyta).

Gymnospermæ, Angiospermæ.

Systematic or Field Botany.

The general characters and relationships of the most important Natural Orders in the British Flora and their centres of extra British distribution; and the chief sub-orders of the following: Ranunculaceæ, Rosaceæ, Solanaceæ, Cupuliferæ, Coniferæ. The description of plants (not necessarily British) in technical language. The origins of the British Flora.

Lecture Days.—Mondays, Tuesdays, Thursdays and Fridays at 10.30.

Laboratory.—Five hours weekly, with two extra in the Summer Term.

FEE :—Lectures and Laboratory, £6 6s.

III.

A. The Distribution of Plants in Time (Palæobotany).

Lectures.—One weekly, during the Winter Term.

B The Distribution of Plants in Space; Geographical Distribution on a Physiological Basis.

Lectures.—One weekly, during the Spring Term.

Third Year Laboratory. Students who take Botany as a Principal Subject will be required to give as much time as is practicable to Laboratory work in Anatomy, Development, Physiology, and Micro-Chemistry, during the Winter and Spring Terms, and during the Summer Term to work through some published piece of research to be selected by the Professor, or to study some special subject or group of plants to be approved by the Professor.

FEE :—Lectures and Laboratory, £8 8s.

REQUIREMENTS FOR DEGREES.

Intermediate Examination in Science :—Course I.

B.Sc. Degree. Botany as a Principal Subject :—Courses II and III.

Botany as a Subsidiary Subject :—Course II, or, in special cases, Courses III and part of II.

Course I is also appropriate for the following:—Intermediate Science or Preliminary Scientific of the University of London (with Supplementary Laboratory work); the first examination for the degrees in Science or Medicine of the Universities of Edinburgh and Glasgow; and the Minor Examination of the Pharmaceutical Society.

Botanical Gardens, Edgbaston. Students attending any of the above classes can obtain from the Professor a card of admission to these Gardens.

TIME TABLE.

BOTANY.				Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	...	...	...	2.30	...	...	..	2.30
Course II.	...	...	...	10.30	10.30	...	10.30	10.30
Course III.	...	...	...	...	<i>(By arrangement.)</i>			...

GEOLOGY

(WITH PHYSIOGRAPHY AND GEOGRAPHY).

Professor : CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor : W. W. WATTS, M.A., Sec.G.S.,

Late Fellow of Sidney Sussex College, Cambridge.

Lecturer and Demonstrator : F. RAW, B.Sc., F.G.S.

LECTURE COURSES.

I.

Lectures, Mondays, Wednesdays, and Fridays, 10.30.

Demonstrations, Tuesdays and Thursdays at 9.30.

Physical Geology.

General characters of the simple rock types, clastic and crystalline.

Origin of the materials of the clastic rocks: Denudation by weather, rivers, glaciers, and the sea; deposition of sediments, and structures resulting from it; consolidation and cementation.

Classification of clastic rocks and characters of the chief types; breccia, conglomerate, sandstone, clay, shale, limestone, coal, salt, gypsum.

Origin and classification of the crystalline rocks: Volcanoes; their action and the rocks produced by them: Minerals: quartz, feldspars, mica, augite, hornblende, olivine calcite, salt, kaolin, serpentine: Textures of the crystalline rocks: Chief types of volcanic rocks; rhyolite, trachyte, obsidian and pitchstone and pumice, andesite, basalt and tachylyte: Chief types of plutonic rocks; granite, syenite, diorite, gabbro, dolerite.

Rock structures: Folds, faults, cleavage, joints; mineral veins.

Arrangement of rocks in the earth's crust; geological maps and sections.

Foliated crystalline rocks: Gneiss, granulite, schist, quartzite, porcellanite, marble; minerals of metamorphism, chialstolite, mica, garnet; contact and dynamic metamorphism.

Historical Geology.

Introductory.—The laws and generalizations of *Stratigraphy* and *Palæontology*: *Fossils*, their mode of petrification, and uses in Geology: The order of superposition: The Geological Record.

The Eozoic Era.—General physical characters and relationships of the *Pre-Cambrian* Rocks.

The Protozoic Era.—General characters of the rocks and fossils of this era : Outlines of the classification of the formations and organic remains of the *Cambrian*, *Ordovician*, and *Silurian* systems in Britain.

The Deutozoic Era.—Chief characteristics of strata and organic remains of British rocks of this era : The *Devonian* and Old Red Sandstone period : The *Carboniferous* system of Britain ; its divisions and fossils ; chief British coalfields and their economic products : The *Permian* rocks, and their peculiar phenomena.

The Mesozoic Era.—Physical features of the *New Red Sandstone* rocks of Britain and Germany : British salt producing districts : The *Jurassic* formations and their ironstones, building stones, and most abundant fossils : The *Cretaceous* rocks, conditions of their deposition and life.

The Cainozoic Era.—Contrasts between Mesozoic and Cainozoic life : Divisions and zoological features of British *Tertiary* rocks : Crust disturbances during Tertiary time.

The Glacial Epoch and the Age of Man.

Local Geology.

Outlines of the geology and physiography of the Midlands :

In addition to the lectures the students will be expected to attend the series of excursions on Saturday afternoons during the Summer term.

FEE :—£5 5s.

II.

Lectures.—Mondays, Wednesdays, and Fridays, at 9.30.

Laboratory.—Tuesdays, at 10.30 and 11.30, with Saturday excursions during the Summer Term.

Petrological.

The description and determination by chemical, physical, and microscopic tests of the chief rock-forming minerals : study and recognition in hand specimens and thin slices of the chief rock types : practical determination and explanation of rock textures : methods of occurrence and distribution in space and time of these rocks, and the structures characteristic of them.

Structural.

The structure and relations of rock masses in the field and on a large scale : study and interpretation of maps and sections : principles of geological surveying : relationships of rock structure to the relief and economics of a country.

Stratigraphical.

The stratigraphy, palæontology, and distribution of the geological formations of Britain ; their chief representatives abroad : The geological systems and their subdivision into series and stages : The life of the systems : Characteristic fossils and principles of correlation : Physical geography of the geological periods : Volcanic history of Britain : Landscape, physiography, and economic products connected with the rocks of the different systems : Physiographical geology in general and in its application to two or three typical districts.

Local.

A detailed study of the stratigraphy of the Midlands : The local development of the different rock-systems ; their relations and fossils.

In addition to the Lectures the students will be expected to attend the series of Excursions during the Summer Term.

FEE:—£4 4s.

III. A.

ECONOMICS GEOLOGY.

Lecture and Laboratory hours by arrangement.

1. The Economic Geology of Britain.

Water : Overground supplies ; reservoirs, drainage areas ; sanitation ; underground supplies ; springs, wells, drainage areas, calculation of resources, effects of rock-structure and surface configuration, contamination, &c. *Building Materials* : Stone, brick, slates, cements ; durability and desirableness ; testing ; distribution and qualities of building materials ; ornamental stones ; road metals ; building sites. *Fuels* : Position, fossils and succession of coal-bearing rocks ; *Coal* and coal-fields ; qualities and distribution of coals ; the Midland coalfields ; working of coal ; structure and correlation of coalfields ; hidden coalfields ; petroleum. *Ores* : Characters and distribution of the chief metalliferous minerals ; nature and structure of the chief kinds of ore deposits ; difficulties in ore mining ; origin of ores ; chief ore-bearing districts in Britain and the Colonies.

2. Field Geology.

The methods and practice of geological surveying as applied to some single district: relief of the ground; succession of rocks; delineation of rocks on maps; relative resistance of rocks to denudation; effect on the physiography, and its use in elucidating underground structure; working out of structure from surface indications; preparation of vertical and horizontal sections; detection of faults and unconformities and their economic results.

A district will be surveyed and mapped in detail. One whole day each week will be devoted to this work in the Summer Term.

Knowledge of the stratigraphy of the district covered will be accepted, in lieu of the stratigraphical and local geology of Course II, from those students who take Course III A for their degree subject.

III. B.

BIOLOGICAL GEOLOGY (PALEONTOLOGY).

1. General Palæontology.

The nature and preservation of fossils: The general succession of life as revealed by the geological record; the imperfection of the record; the structure of a species and a genus belonging to each of the sub-kingdoms of the invertebrata and to the cryptogamia; a knowledge of the structure, classification and range of the chief fossil families belonging to the following groups—*foraminifera*, *graptolites*, *corals*, *crinoids*, *echinoids*, *brachiopods*, *lamellibranchs*, *gastropods*, *cephalopods*, *trilobites*; a general knowledge of the fauna and flora of the geological systems.

2. Detailed Palæontology.

A detailed study of one of the fossil orders of the invertebrata or cryptogamia; or of the fauna or flora of some one geological system and its divisions.

III. C.

PETROLOGICAL GEOLOGY (MINERALOGY AND PETROGRAPHY).

1. Mineralogy.

Form and structure of Minerals; nature of crystalline form; systems of crystalline form; isomorphism; pseudo-morphism: Chemical composition of Minerals: Classification of Minerals: Description and determination of minerals by microscopic, chemical, and physical tests; crystal optics and the use of convergent and plane polarised light.

2. Petrography.

Classification and determination of rocks by microscopical, physical, and chemical means in hand specimens and rock-slides; study of the occurrence and distribution of rocks in Britain and the principal and typical foreign localities; principles underlying the genesis and classification of rocks; dynamical and thermic metamorphism of rocks.

Lecture hours as in Course II, with the addition of one whole day weekly (Friday) during the Summer Term.

FEE for Course III A, B, or C, £4 4s.

IV.

HIGHER STRATIGRAPHY, PALEONTOLOGY AND PETROLOGY.

Lecture Days and hours by arrangement with class.

This Course is projected for candidates for the degree of M.Sc., and for those who desire to study in detail the Petrological, Historical, and Biological aspects of Geology. The Course extends over one year, the student taking up the several sections of the subject in sequence, and accompanying every stage by a study of the books and publications in the College Library, and of the illustrative series of fossils and rocks in the College Museum. During the third Term the pupil prepares a special Thesis upon some selected subject in Petrology, Geology, or Palæontology.

FEE FOR EACH TERM :—Lectures and Laboratory (four hours weekly), £2 2s.

RESEARCH WORK.

IN GEOLOGY AND PALEONTOLOGY.

Advanced students who have completed their systematic College Courses, students who have obtained the degree of M.Sc. and are preparing for the Doctorate, and occasional geological students, British or Foreign, studying some special branch of Geology or Palæontology, work in the Museum and Laboratory in College hours during term time, under the direction of the Professor and Assistant Professor, with use of the collections and microscopes.

The chief subjects at which such special students may work include (1) Graptolites, Trilobites, or Brachiopoda, &c., British and Foreign ; (2) Field Geology and Geological Mapping ; (3) Petrography, general and special.

The large collections of rocks and fossils in the College Museum from the older rocks, the range and variety of the geological formations in the Birmingham District, and the proximity and availability of the classical geological ground of the West of England, afford research students especial opportunities and facilities for the prosecution of original work.

FEE for each Term :—£2 2s.

PRACTICAL WORK.

LABORATORY CLASSES.

In connexion with the foregoing Courses, Practical classes are held in the Geological Laboratory, upon such days and hours as are found most convenient to the students. The instruction given has reference to the actual study and examination of the minerals, rock-specimens and fossils noticed in the lectures ; the methods of sectioning, mounting, and determining of fossils ; the preparation of rock specimens for the microscope and cabinet ; the drawing of figures, maps, sections, &c.

Persons not attending Lectures, but wishing to work in the Geological Laboratory and Museum, can do so at all times when open, on payment of a terminal fee of £2 2s., or 10s. 6d. for two hours weekly, each term. Such students will be encouraged and assisted in the prosecution of their private studies or original work.

REQUIREMENTS FOR DEGREES.

B.Sc. Degree. 1. Geology as the principal subject : Course I in the first year ; Course II in the second year, together with part A, B, or C in Course III.

2. Geology as a subsidiary subject :—

(a) One year, Course I.

(b) Two years, Course I and Course II.

B.A. Degree. The same as for B.Sc. with Geology as a subsidiary subject.

TIME TABLE.

GEOLOGY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	10.30	...	10.30	...	10.30
Demonstrations ... ..	...	9.30	...	9.30	...
Course II.	9.30	...	9.30	...	9.30
Course III.	9.30	...	9.30	...	9.30

HUMAN ANATOMY AND ANTHROPOLOGY.

Professor: BERTRAM C. A. WINDLE, M.A., M.D., D.Sc.,
F.R.S., F.S.A.

Lecturer: W. WRIGHT, M.B., Ch.B., M.R.C.S.

Demonstrators: W. E. BENNETT, F.R.C.S. (Eng.),
J. JAMESON EVANS, M.B., C.M., F.R.C.S. (Eng.)

The courses in Human Anatomy will be found fully described in the Medical Section of the Calendar. The following information relates to candidates taking the above subject for the B.Sc. examination.

I.—In Human Anatomy the candidate must have pursued the entire medical course for two Winter and one Summer Sessions as detailed in the regulations for medical degrees. He must also produce evidence that he has dissected the whole body at least once.

II.—In Anthropology the candidate must have attended the following courses of lectures:

- (i.) The course on Human Embryology.
- (ii.) A course of lectures and practical instruction in Anthropology and Ethnology. This course will include a general review of the province of Anthropology. Zoological and Anthropological characters of Man. Physical measurements on the living subject. Cranial and other skeletal measurements. The chief races of the world and their physical characters.
- (iii.) A short course of five lectures on the Principles of Teratology which will be given at the close of the course on Embryology.

FEES for these Courses:—

I. For the two Winter and one Summer				
Sessions	...	...	...	£26 5 0
Incidental Fees	...	...	...	3 13 6
II. For the Courses detailed under this				
section	...	...	...	4 4 0

PHYSIOLOGY.

Professor : E. W. WACE CARLIER, M.D., B.Sc., F.R.S.E

Demonstrator : J. H. RHODES, M.B., Ch.B.

LECTURE COURSES.

I.

The course prescribed for the first year in the Faculty of Medicine.

II.

Advanced Practical Physiology.

Mondays and Fridays, from 2.30 to 4.30, during the whole Winter Session.

The Course will include the more advanced problems of experimental physiology, histology and physiological chemistry. The experimental part includes the physiology of muscle, nerve, heart, circulation, respiration, central nervous system and organs of sense and voice. The chemical section includes the analysis of organic substances found in the body, the chemical and spectroscopic examination of the blood and its derivatives, the chemistry of the digestive products and the results of their activity. The histological part consists in the practice of more advanced and complicated methods of histological research and of the results obtained by their use.

FEE for the Course, £6 6s. including an incidental fee of £1 1s.

REQUIREMENTS FOR DEGREES.

B.Sc. Degree.

- (1) Physiology as a principal subject :

Students must take Course I, and in the subsequent year, must repeat the systematic lectures, and attend Course II.

- (2) Physiology as a subsidiary subject :

Course I.

LATIN AND GREEK.

Professor : E. A. SONNENSCHN, M.A., Oxon.

Lecturer : J. W. CROWFOOT, B.A., Oxon.

LATIN.

LECTURE COURSES.

I.

Mondays and Wednesdays, at 2.30.

SUBJECTS—(1) Horace, *Satires*.
(2) Tacitus, *Annals*, I.

FEE :—£2 12s. 6d.

II.

Mondays and Wednesdays, at 2.30.

SUBJECTS—(1) Livy, VI.
(2) Juvenal, *Satires* I, III, IV.

FEE :—£2 12s. 6d.

III.

Tuesdays and Thursdays, at 3.30.

SUBJECTS—(1) Select plays of Plautus, with Old Latin
Philology and Grammar.
(2) The Academics of Cicero, with the
outlines of the history of Philosophy
at Rome.

FEE :—£2 12s. 6d.

IV.

SUBJECT—The History of Latin Literature, with
illustrative extracts from the chief
writers.

The hour of meeting for this Course will be fixed at
the commencement of the session.

FEE :—£1 1s.

Composition Sets.

Sets will be formed for the practice of Latin Composition of various stages of difficulty, and will meet on Fridays, at 2.30. More advanced students will be taken separately, at hours to be fixed at the commencement of the session.

FEE :—£1 11s. 6d.

GREEK.*LECTURE COURSES.***I.**

Tuesdays and Thursdays, at 2.30.

SUBJECTS—(1) Lysias, *Eratosthenes* and *Agoratus*
(Orations 12, 13).
(2) *Æschylus*, *Prometheus* or *Seven against Thebes*.

FEE :—£2 12s. 6d.

II.

Tuesdays and Thursdays, at 2.30.

SUBJECTS—(1) Homer, *Iliad*, XXII, XXIII, XXIV.
(2) Herodotus, II.

FEE :—£2 12s. 6d.

III.

Mondays and Wednesdays, at 3.30.

SUBJECTS—(1) Plato, *Republic*, I, II, III, IV.
(2) A Greek play, to be selected at the first meeting of the class.

FEE :—£2 12s. 6d.

IV.

Tuesdays at 4.30.

SUBJECT—The outlines of Greek History, illustrated by extant monuments.

This Course will consist of about nine Lectures, to be delivered during the Winter Term.

FEE:—10s. 6d.

Composition Sets.

Sets will be formed for the practice of Greek Composition of various stages of difficulty, and will meet on Fridays, at 3.30. More advanced students will be taken separately at hours to be fixed at the commencement of the session.

FEE:—£1 11s. 6d.

REQUIREMENTS IN LATIN AND GREEK FOR DEGREES.

Intermediate Arts Examination : Course I.

B.A. Degree.

- (i.) When Latin or Greek is a principal subject :
Courses II and III in successive years,
together with Course IV in one of the
two years.
- (ii.) When Latin or Greek is a subsidiary subject :
either Course II *or* Course III.

M.A. Degree.

Candidates who offer either Latin or Greek alone will be required to show a general knowledge of the Language and Literature, and a special knowledge of *four* authors to be selected by themselves and approved by the University.

Candidates who offer either Latin or Greek together with some other subject will be required to show a special knowledge of only *two* authors.

TIME TABLE.

LATIN.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	2.30	...	2.30	...	...
Course II.	2.30	...	2.30	...	...
Course III. ... ..	...	3.30	...	3.30	...
Course IV. ... ..	...	<i>(By arrangement.)</i>			...
Composition Sets ...	...	...	...	...	2.30
GREEK.					
Course I. ... ..	...	2.30	...	2.30	...
Course II. ... ..	...	2.30	...	2.30	...
Course III.	3.30	...	3.30	...	...
Course IV. ... ..	...	4.30	...	...	...
Composition Sets ...	...	...	...	...	3.30

ENGLISH LANGUAGE AND LITERATURE.

Professor : W. MACNEILE DIXON, Litt.D., LL.B., Dub.

Lecturer : R. PAPE COWL, M.A., Dub.

LECTURE COURSES.

I.

A. Lectures upon the History of English Literature from 1350 to 1600, upon Literary Forms, and upon English Constitutional History.

B. The following texts :—

Language and Literature.

CHAUCER : *Prologue.*

SPENSER : *Faery Queen*, Bk. I.

SHAKSPERE :

Midsummer Night's Dream.

Richard II.

Hamlet.

SIDNEY : *Defence of Poesy.*

Palgrave's *Golden Treasury*,
Bk. I.

Political Philosophy.

MORE : *Utopia.*

BACON : *Essays Of Truth, Of Unity in Religion, Of Simulation and Dissimulation, Of Envy, Of Great Place, Of Nobility, Of Seditions and Troubles, Of Travel, Of Empire, Of Counsel, Of the True Greatness of Kingdoms and Estates, Of Riches, Of Prophecies, Of Ambitions, Of Usury, Of Negotiating, Of Ceremonies and Respects, Of Honour and Reputation, Of Judicature, Of Vicissitudes of Things.*

BURKE : *Speech on Conciliation with America.*

The lectures will be given on Mondays, Thursdays, and Fridays, at 10.30.

FEE :—£3 3s.

II.

A. Lectures upon the History of English Literature from 1600 to 1740, and upon Literary Theory.

B. The following texts:—

*English Literature.*SHAKESPEARE: *Macbeth*.Lamb's Specimens of the Elizabethan Dramatists — *Sackville and Norton, Kyd, Peele, Marlowe, Chapman, Heywood, Middleton, Webster, Ford, Jonson, Beaumont and Fletcher, Massinger.*

Palgrave's Golden Treasury, Bks. II. and III.

MILTON: *Paradise Lost*, Bks. I. and II.DRYDEN: *Abraham and Achitophel*.POPE: *Essay on Criticism*.BERKELEY: *Principles of Human Knowledge*.*Literary Theory.*ARISTOTLE: *Poetics* (in translation).JOHNSON: *Life of Milton*.COLERIDGE: *Lectures on Shakespeare*.

The lectures will be given on Tuesdays and Fridays at 11.30, and on Wednesdays at 9.30.

FEE:—£3 3s.

III.

A. Lectures on the History of English Literature from 1740 to 1850, upon the English Language, and upon Literary Theory.

B. The following texts:—

*English Literature.*SHAKESPEARE: *Tempest, Henry IV.*, Pts. 1 and 2.JOHNSON: *London*.COLLINS: *Poems*.SHELLEY: *Adonais*.

WORDSWORTH: Matthew Arnold's Selections.

Palgrave's Golden Treasury, Bk. IV.

COLERIDGE: *Ancient Mariner, Christabel*.CARLYLE: *Sartor Resartus*.TENNYSON: *In Memoriam, Ulysses, Lucretius*.BUTLER: *Sermons*.*English Language.*

Selections from Chaucer and Middle English Writers, as read in Class.

Literary Theory.

COLERIDGE:

Biographia Literaria (parts relating to literary criticism).

ARNOLD: *Essays in Criticism* (First Series), omitting those on Spinoza and Marcus Aurelius.

The lectures will be given upon Mondays, Wednesdays, and Thursdays, at 11.30.

FEE :—£3 3s.

REQUIREMENTS FOR DEGREES.

Intermediate Arts Examination : Course I.

B.A. Degree.

Students who take English as a principal subject at the B.A. Degree Examination are required to attend lectures in Courses II and III in successive years, and to answer at the examination in these Courses. Students who take English as a subsidiary subject may select *either* Course II *or* Course III.

M.A. Degree.

Students who desire to take the M.A. Degree in English alone are required to pass an examination in *four* of the following subjects, of which A and B are compulsory :—

A. The History of English Literature.

B. The following texts :—

CHAUCER : *Knight's Tale, Troilus and Cressida*.
 SPENSER : *Shepherd's Calendar*. Tottel's Miscellany.
 SHAKSPERE : *Romeo and Juliet, King Lear, Julius Cæsar, Anthony and Cleopatra*. MILTON : *Paradise Regained*. POPE : *Rape of the Lock*. WORDSWORTH : *Laodamia*. SHELLEY : *Prometheus Unbound*. KEATS : *Hyperion*. BYRON : *Childe Harold*, Cantos 1 and 2. ARNOLD : *Sohrab and Rustem*. BROWNE : *Religio Medici*. DRYDEN : *Essay on Satire*. BURKE : *Appeal from the New to the Old Whigs*. LAMB : *Essays*. DE QUINCEY : *Essay on Style*. RUSKIN : *Lectures on Art*.

C. Germanic Philology, with selected Anglo-Saxon and Middle English Texts, as read in Class.

D. Shakspeare.

E. English Literature studied in its relation either to French and German *or* to Italian Literature.

F. Special study of some one period of Literature to be selected in consultation with the Professor.

G. Literary Theory. The following texts are recommended for study :—

ARISTOTLE : *Poetics*. DANTE : *De Vulgari Eloquentia*, Bk. II.
 LESSING : *Laokoon*. DU BELLAY : *Défense et Illustration de la Langue française*. VICTOR HUGO : Preface to *Cromwell*. The critical writings of Sidney, Dryden, Johnson, Lamb, Coleridge, Wordsworth, and Arnold.

Students who select English as *one* of the subjects for the M.A. Degree are required to pass an examination in two of the above subjects, of which B is compulsory.

TIME TABLE.

ENGLISH.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	10.30	...	...	10.30	10.30
Course II. ... ..	...	11.30	9.30	...	11.30
Course III.	11.30	...	11.30	11.30	...

FRENCH LANGUAGE AND LITERATURE.

Professor: CLOVIS BÉVENOT, M.A., Oxon.

Lecturer: R. LECLÈRE, Lic. ès Lettres.

LECTURE COURSES.

I.

Mondays, Wednesdays, Fridays, at 4.30 ; and Fridays at 11.30 (Conversation).

- (i.) French Accidence and Syntax ; Composition ;
- (ii.) Reading and Translation of some prescribed books ;
- (iii.) Translation at sight ;
- (iv.) Short summary of French Literature.
- (v.) *Viva voce*.—(a) reading ; (b) dictation ; (c) conversation.

The books prescribed for 1900—1901 are :—

Montesquieu. Considérations sur les Causes de la Grandeur et de la Décadence des Romains [Edit. Petit de Julleville, Publ. Delagrave, Paris].

d'Alembert. Discours préliminaire de l'Encyclopédie [Edit. Ducros ; publ. Delagrave].

Voltaire. Zaïre [Bell and Sons, London].

FEE :—£4 4s.

II.

Tuesdays, Thursdays, at 3.30, and Mondays, at 4.30 ; and Conversation and Debates at an hour to be arranged. The Lectures will be given in French.

- (i.) Studies in Style and Idioms, Composition, Metre.
- (ii.) Preparation and Translation of some French books prescribed.
- (iii.) Literature.—(a) Summary of the 17th, 18th, and 19th Centuries.
(b) Special period 1789—1850.

(iv.) Elementary Philology and Historical Grammar.

(v.) Conversation, Papers and Debates in French.

The books prescribed for 1900—1901 are :—

Corneille, Horace.

Bossuet, Oraison funèbre d'Henriette de France,
reine d'Angleterre.

Racine, *Athalie*.

Molière, *Les Femmes Savantes*.

FEE :—£4 4s.

III.

Mondays, Tuesdays, Thursdays, at 2.30 ; and Conversation, Discussions, and Debates at an hour to be arranged. The Lectures will be given in French.

(i.) Composition, Essay and Précis-writing in Modern French.

(ii.) Preparation and Translation of some French books prescribed.

(iii.) French Literature : from old times to 1600.

(iv.) Reading of Old French, Historical Grammar, mainly in "Chrestomathie du Moyen Age," par G. Paris and Langlois (Hachette).

(v.) Conversation mainly on the prescribed books ; translation at sight of a passage of Modern English Prose into French, and of a passage of modern French verse into English.

The books prescribed for 1900—1901 are :

V. Hugo, *Légende des Siècles* [Vol. I. of the 4 vol. edition] ; *Darmesteter*, *Ecrivains du XVI^e Siècle*.

Montaigne, *Extraits* [Petit de Julleville, Publ. Delagrave].

Darmesteter, *La Vie des Mots*.

FEE :—£4 4s.

REQUIREMENTS FOR DEGREES.

Intermediate Examination in Arts: Course I.

B.A. Degree.

(a) When French is a Principal Subject : Courses II and III in successive years.

(b) When French is a Subsidiary Subject : Course II.

M.A. Degree.

(a) All candidates will be required to write an Essay in French, and to pass a *viva voce* examination.

(b) Candidates who desire to take the M.A. Degree in French alone will be required to select *four* subjects from the following list :—

(i) History of French Literature, with special knowledge of a set period.

(ii.) French Philology and Old French Texts, as from time to time prescribed.

(iii.) The Renaissance ; 15th and 16th Century Texts.

(iv.) Bossuet and Fénelon ; V. Hugo and Lamartine ; their lives and works.

(v.) Outlines of French History and Geography ; Constitution and Institutions of the French Republic.

(vi.) The language, literature, and thought of England *or* of Germany, studied in relation to the language, literature, and thought of France.

(c) Candidates who take the M.A. Degree in French together with another subject are required to select *two* subjects from the foregoing list.

TIME TABLE.

FRENCH.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	4.30	...	4.30	...	11.30 } 4.30 }
Course II.	4.30	3.30	...	3.30	...
Course III.	2.30	2.30	...	2.30	...

GERMAN LANGUAGE AND LITERATURE AND GERMANIC PHILOLOGY.

Professor : HERMANN GEORG FIEDLER, Ph.D., Leipzig.

Lecturer : CARL WICHMANN, Ph.D., Kiel.

LECTURE COURSES.

I.

- (i.) Mondays at 3.30: German Accidence, Syntax, and Composition.
- (ii.) Wednesdays at 3.30: Conversation, Dictation, and Translation at sight.
- (iii.) Thursdays at 3.30: Reading and Translation of:—E. von Wildenbruch, *Das edle Blut*; Th. Storm, *Immensee*.

FEE :—£3 13s. 6d.

II.

- (i.) Mondays at 3.30: German Literature from 1748 to 1850. Elements of Historical German Grammar.
- (ii.) Tuesdays at 4.30: Reading and Translation of:—Schiller's *Wilhelm Tell*; Heine's *Harzreise*; Selected Poems of Schiller and Goethe.
- (iii.) Wednesdays at 3.30: Conversation, Dictation, and Translation at sight.
- (iv.) Thursdays at 4.30: Studies in Style, Idioms, and Composition.

FEE :—£4 4s.

III.

- (i.) Mondays at 4.30: Composition and Essay Writing. Studies in German Metre.
- (ii.) Tuesdays at 4.30: Reading and Translation of:—Schiller's *Wallenstein*; Goethe's *Iphigenie*; Goethe's *Italienische Reise*; Selected Modern German Poems.
- (iii.) Wednesdays at 4.30: Conversation, Dictation, and Translation at sight.

- (iv.) Fridays at 4.30: Literature from the oldest times to 1748. Middle High German and Historical Grammar, with Reading of some M.H.G. texts: Wright's M.H.G. Primer, Selections from the Nibelungenlied and the Minnesingers.

FEE:—£4 4s.

IV.

- (i.) Tuesdays at 3.30: Lectures (delivered in German) on German Literature of the Present Day.

FEE:—£1 11s. 6d.

- (ii.) Fridays at 3.30: Germanic Philology and Old High German.

FEE:—£1 11s. 6d.

- (iii.) Mondays at 2.30: Advanced Middle High German and XVI. Century German.

FEE:—£1 11s. 6d.

REQUIREMENTS FOR DEGREES.

Intermediate Examination in Arts: Course I.

B.A. Degree.

(a) When German is a Principal Subject: Courses II and III, in successive years.

(b) When German is a Subsidiary Subject: Course II.

M.A. Degree.

(a) All Candidates will be required to write an Essay in German and pass a *viva voce* examination.

(b) Candidates who desire to take the M.A. Degree in German alone, will be required to select *four* subjects from the following list:—

- (i.) History of German Literature, with special knowledge of a selected period. [Course IV, (i.)]
 (ii.) Germanic Philology and Old High German texts, as from time to time prescribed. [Course IV, (ii.)]

- (iii.) Middle High German and XVI. Century texts, as from time to time prescribed. [Course IV, (iii.)]
 - (iv.) Goethe and Schiller: their lives and works.
 - (v.) *Deutsche Realien*, i.e. Outlines of German History and Geography, the Constitution and Institutions of the German Empire. (A special course on this subject will be announced later.)
 - (vi.) English or French Literature studied in its relation to German Literature.
- (c) Candidates who desire to take the M.A. Degree in German together with another subject, will be required to select *two* subjects from the above list.

ANGLO-SAXON.

Mondays at 4.30, and Wednesdays at 3.30.

Sievers' Old English Grammar, translated by Cook ;
Sweet's Anglo-Saxon Reader.

FEE:—£2 12s. 6d.

Students taking up the study of Anglo-Saxon should attend the lectures on Germanic Philology during the Winter Term.

FEE:—10s. 6d.

Additional Classes in Anglo-Saxon may be arranged.

TIME TABLE.

GERMAN.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	3.30	...	3.30	3.30	...
Course II.	3.30	4.30	3.30	4.30	...
Course III.	4.30	4.30	4.30	...	4.30
Course IV.... ...	2.30	3.30	...	...	3.30
Anglo-Saxon	4.30	...	3.30	...	...

PHILOSOPHY.

Professor: J. H. MUIRHEAD, MA., Oxon. and Glasgow.

Lecturer on Education: FRANK ROSCOE.

LECTURE COURSES.

I.

Logic.

Mondays, Wednesdays and Fridays, at 12.30.

SCOPE of the SCIENCE of LOGIC.

TERMS: Kinds of Terms, Denotation and Connotation,
Logical Division and Definition, the Predicables.

PROPOSITIONS: Import, Kinds, Implications of Propositions.

INFERENCE: General Nature and Kinds of Inference.

DEDUCTION: Syllogism, Forms of Syllogism, Categorical
Syllogism, the Conditional Syllogism, other forms of
Deductive Inference, Fallacies.

INDUCTION: Ground of Induction in Postulate of the
Uniformity of Nature, Cause and Effect, Observation
and Experiment, Analogy, Methods of Analysis.

RELATION BETWEEN INDUCTION AND DEDUCTION.

EXPLANATION AND HYPOTHESIS.

CLASSIFICATION.

FEE:—£3 3s.

II.

Psychology.

Mondays, Tuesdays and Thursdays, at 9.30.

SCOPE AND METHOD OF THE SCIENCE: Relation to other
Sciences and to Philosophy in general. Methods of
Psychology.

BODY AND MIND: Outlines of Nervous System. Relation
of Body and Mind.

GENERAL ANALYSIS OF CONSCIOUSNESS: Elements in Con-
sciousness, Primary Mental Processes of Attention,
Retention and Assimilation.

COGNITION: Sensation, Perception, Memory, Imagination,
Conception, Judgment and Reasoning, Thought and
Language.

FEELING: Pain and Pleasure, Elementary Aesthetic
Feeling, the Emotions, Expression of the Emotions,
the Sentiments.

VOLITION: Reflex and Instinctive Action, Suggestion,
Voluntary Action, Desire and Motive, The Freedom of
the Will. Habit.

CONSCIENCE AND MORAL JUDGMENT.

FEE:—£3 3s.

III.

Moral Philosophy.

Mondays, Wednesdays and Fridays, at 10.30.

THE RISE OF MORAL PHILOSOPHY: The Sophists.

SOCRATES: Minor Socratic Schools.

PLATO.

DEMOCRITUS AND THE ATOMISTS.

ARISTOTLE.

THE STOICS AND EPICUREANS.

NEOPLATONISM.

THE STARTING-POINT OF MODERN PHILOSOPHY: Descartes,
Hobbes.

THE MORAL SENSE SCHOOL: Shaftesbury, Hutcheson,
Butler.

UTILITARIANISM: Hume, Bentham, Mill, Spencer.

POSITIVISM: Comte, English Positivists.

MODERN IDEALISM: Kant, Hegel, Green.

FEE:—£3 3s.

IV.

History of Educational Ideas.

Lecture days by arrangement.

(a) Sketch of Greek Educational Theory: Plato and Aristotle.

(b) Condition of Education at the time of the Renaissance: the Jesuits, Erasmus and Luther.

(c) Comenius, Rabelais, Milton and Locke.

(d) Rousseau.

(e) Pestalozzi and Froebel.

(f) Utilitarian School: The Rise of National Education in England.

(g) Herbart.

(h) Recent Theory.

FEE:—£3 3s.

**REQUIREMENTS FOR DEGREES AND FOR THE
TEACHERS' DIPLOMA.**

Intermediate Examination in Arts: Course I.

B.A. Degree.

1. For Candidates taking Philosophy as a subsidiary subject, having already taken Logic at the Intermediate: either Course II or Course III. For those who have not

taken Logic at the Intermediate: either Course I, or Course II, or Course III.

2. For Candidates taking Philosophy as a principal subject, having already taken Logic at the Intermediate Examination: Courses II and III in successive years, with additional work as below. For those who have not taken Logic at the Intermediate Examination: any two of Courses I, II, or III in successive years, with additional work as below.

LOGIC: Mill's Logic, Book III., chapters I.—XII., and Book VI.

PSYCHOLOGY: Fraser's Selections from Berkeley, Parts I. and II.

MORAL PHILOSOPHY: Either (a) Plato's Republic (English Translation), or (b) Butler's Sermon's, I., II., III., XI., XII., and Kant's Metaphysic of Morals (English Translation).

3. For Candidates taking the History of Educational ideas as a subsidiary subject: Course IV, together with the study of the following prescribed book:—The Theory of Education in Plato's Republic (Davis and Vaughan's Translation of the Republic).

Teachers' Diploma.

1. For Candidates who have taken the Government Certificate: Courses II, III and IV, with prescribed work as above. Graduates in Science or Arts who have taken any of these subjects in their Degree Examination will not be required to pass another Examination in the same subject.

2. Other Candidates will be required to pass in addition a practical Examination in the Art of Teaching and School Method.

B.Sc. Degree.

1. For Candidates taking Psychology as a subsidiary subject: Course II, with Külpe's Outlines of Psychology, Part I.

2. For Candidates taking Psychology as a principal subject: Course II, with Külpe's Outlines of Psychology, and experimental work in connexion with the Course on Advanced Practical Physiology.

M.A. Degree.

1. For Candidates taking the M.A. Degree in Philosophy alone :

1. Psychology.
2. Logic and Metaphysics.
3. Moral and Political Philosophy.
4. The following books :

PSYCHOLOGY : Ward's Article on Psychology (Encyclop. Brit.) ; Stout's Analytic Psychology. LOGIC AND METAPHYSICS : Bosanquet's Logic ; Bradley's Appearance and Reality. MORAL AND POLITICAL PHILOSOPHY : Green's Prolegomena to Ethics ; Hegel's Philosophy of Law ; Bosanquet's Philosophical Theory of the State.

5. A thesis on a subject to be agreed upon in consultation with the Professor.

2. For Candidates taking Philosophy along with another subject in the M.A. Degree : any two of 1, 2, 3 above, with the corresponding books from 4.

TIME TABLE.

PHILOSOPHY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.	12.30	...	12.30	...	12.30
Course II.	9.30	9.30	...	9.30	...
Course III.	10.30	...	10.30	...	10.30
Course IV.	<i>(By arrangement.)</i>				

TIME TABLE

*For Students preparing for the Intermediate
Examination in Science.*

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs.	Fri.
Pure Mathematics ...	I.	12.30	11.30	...	11.30	12.30
Physics ...	I.	11.30	...	11.30	...	11.30
" (Practical) ...	...	...	...	2—4	...	...
Chemistry ...	I.	9.30	9.30*	9.30	9.30*	9.30
Zoology ...	I.	...	12.30	...	12.30*	...
" (Practical) ...	...	...	2-4.30	...	2-4.30*	...
Botany ...	I.	2.30	...	...	..	2.30

* During Winter and Spring Terms only.

TIME TABLE

For Students preparing for B.Sc. Examination.

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs.	Fri.
Pure Mathematics ...	II.	9.30	9.30	...	9.30	9.30
" " ...	III.	9.30	9.30	...	9.30	9.30
Applied Mathematics	I.	10.30	10.30	...	10.30	10.30
" "	II.	10.30	10.30	...	10.30	10.30
Physics	II.	4.0	...	4.0	...	4.0
Chemistry ...	II.	} <i>Two hours by arrangement.</i>				
" ...	III.					
Zoology ...	II.	12.0	...	12.0	...	12.0
" ...	III.	10.30	...	...	...	10.30
Botany ...	II.	10.30	10.30	...	10.30	...
" ...	III.	<i>One hour weekly by arrangement.</i>				
Geology ...	I.	10.30	...	10.30	...	10.30
" ...	II.	9.30	...	9.30	...	9.30
" ...	III.	9.30	...	9.30	...	9.30
Anatomy ...	...	...	<i>See Medical Syllabus.</i>			...
Anthropology ...	...	...	<i>By arrangement.</i>			...
Physiology ...	...	...	<i>See Medical Syllabus.</i>			...
" Advanced	...	2.30	...	...	...	2.30

TIME TABLE

*For Students preparing for Intermediate Examination
in Arts.*

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs.	Fri.
Latin... ..	I.	2.30	...	2.30	...	...
" (Composition)	...	...	...	...	...	2.30
Greek	I.	...	2.30	...	2.30	...
" (Composition)	...	...	...	...	...	3.30
English	I.	10.30	...	...	10.30	10.30
French	I.	4.30	...	4.30	...	4.30
" (Conversation)	...	...	...	...	...	11.30
German	I.	3.30	...	3.30	3.30	...
Pure Mathematics ...	I.	12.30	11.30	...	11.30	12.30
Logic... ..	I.	12.30	...	12.30	...	12.30

TIME TABLE

For Students preparing for B.A. Examination.

SUBJECT.	Course	Mon.	Tues.	Wed.	Thur.	Fri.
Latin	II.	2.30	...	2.30	...	...
"	III.	...	3.30	...	3.30	...
"	IV.	...	<i>By arrangement.</i>			...
" (Composition)	...	...	...	...	...	2.30
Greek	II.	...	2.30	...	2.30	...
"	III.	3.30	...	3.30	...	...
"	IV.	...	4.30	...	...	...
" (Composition)	...	...	...	...	...	3.30
English	II.	...	11.30	9.30	...	11.30
"	III.	11.30	...	11.30	11.30	...
French	II.	4.30	3.30	...	3.30	...
"	III.	2.30	2.30	...	2.30	...
German	II.	3.30	4.30	3.30	4.30	...
"	III.	4.30	4.30	4.30	...	4.30
Pure Mathematics...	II.	9.30	9.30	...	9.30	9.30
" "	III.	9.30	9.30	...	9.30	9.30
Applied "	I.	10.30	10.30	...	10.30	10.30
" "	II.	10.30	10.30	...	10.30	10.30
Philosophy...	II.	9.30	9.30	..	9.30	...
"	III.	10.30	...	10.30	...	10.30
"	IV.	...	<i>By arrangement.</i>			...

**REGULATIONS AFFECTING STUDENTS OF
MASON UNIVERSITY COLLEGE,**

Approved by the University Council, 17th July, 1900.

(1) Students who have passed the Intermediate Examination in Science or Arts of the University of London after at least one session of regular study at Mason University College, shall be excused the First Year Course and the Intermediate Examination, and shall enter on the Degree Course as second year students of the University.

(2) Present regular students of Mason University College who have passed the Intermediate Examination in Science or Arts of the University of London, and have subsequently spent at least one session at the College in regular study for the Final Examination, may be excused the First Two Years and the Intermediate Examination, and may enter as third year students of the University if, in the opinion of their Faculty, they have fulfilled in the College conditions sufficiently nearly corresponding to those laid down for second year students.

(3) Present regular students of Mason University College who have passed the Intermediate Examination in Science or Arts of the University of London, and have subsequently spent at least two sessions at the College in regular study for the Final Examination, may be excused the Intermediate Examination and further attendance at lectures, may enter the University and take rank as if they had completed three years at the University, and may present themselves at a Final Examination for a Degree if, in the opinion of their Faculty, they have fulfilled in the College conditions sufficiently nearly corresponding to those laid down for second and third year students of the University.

Persons who have passed the Intermediate Examination in Science or Arts of the University of London, and who enter the University in 1900, shall be excused the Intermediate Examination, and shall enter as second year students of the University.

FACULTY OF MEDICINE.

REGULATIONS FOR DEGREES IN MEDICINE, SURGERY, AND PUBLIC HEALTH :

Courses of Instruction.

Hospital Information.

REGULATIONS FOR DENTAL DEGREES :

Courses of Instruction.

Hospital Information.

1900-1901.

FACULTY OF MEDICINE.**PROSPECTUS.**

THE SESSION will be opened on Monday, the 1st of October, 1900.

There are two Sessions in the academical year, and students may commence their studies at the beginning of either, but are recommended to enter in October.

THE WINTER SESSION begins on the 1st of October and terminates at the end of March.

THE SUMMER SESSION commences on the 16th of April and terminates at the end of June.

The Dean's Office is open daily (except Saturdays), from 9.30 to 10 a.m., and from 2.30 to 3 p.m., and all information may be obtained there. The Dean attends during Term on Monday, Wednesday, and Friday, from 2.30 to 3. During vacations the Dean may be seen by appointment, or information may be obtained by letter addressed to the Secretary.

All Fees are payable in advance (*i.e.* at the beginning of the Session on account of which they are due), at the Secretary's Office in the University. Cheques should be drawn in favour of Mr. Geo. H. Morley.

Every student, on entrance, is required to produce a testimonial or such other evidence of good character as shall be satisfactory to the Dean, and to sign an engagement that he will conform to such regulations as have been or may be made for the maintenance of order in the University.

Students intending to take lodgings in Birmingham or the vicinity are requested to place themselves in communication with the Secretary.

UNIVERSITY OF BIRMINGHAM.

REGULATIONS FOR MEDICAL AND SURGICAL DEGREES.

The University confers the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and of Bachelor and Master of Surgery (B.Ch. and M.Ch.). The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. The first four of these years must be spent in the University. The fifth year may be spent at any other school or schools of medicine recognised by the University. Candidates for the above degrees must have complied with the following regulations :—

A. They must have passed the Matriculation Examination of the University or some other examination recognised as equivalent to the Matriculation.

For the present the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of Medical students, provided always that such examination shall have included the classes *a*, *b*, *c*, and *d* as above and that all the subjects have been passed at one examination :—

- (a) The Previous Examination of the University of Cambridge.
- (b) Responsions of the University of Oxford.
- (c) The Matriculation Examination of any other University in the United Kingdom.
- (d) The leaving Certificate (Higher) of the Oxford and Cambridge Boards.
- (e) The Oxford or Cambridge Junior Local Examinations (First or Second Class Honours.)
- (f) The Oxford or Cambridge Senior Local Examination (Honours).
- (g) The College of Preceptors Examination for First Class Certificate.

B. Candidates must also have pursued the curriculum and passed the examinations set down below, subject to the following regulations :—

- (a) The Winter Session includes the Winter and Spring Terms, and the Summer Session corresponds with the Summer Term as set down in the Calendar.
- (b) At the end of each course of lectures or practical instruction, the student must apply to his teacher for a certificate, which he will lodge with the Registrar when entering his name for an examination.
- (c) This certificate must contain a statement that the student has attended to the satisfaction of the Professor, Lecturer, or Hospital Teacher not less than two-thirds of the lectures, practical classes, or clinical instruction, of which the course consists, together with such class-examinations or other exercises as each teacher may prescribe in connection with his own course. (N.B.—In cases of illness duly certified, the Dean has a discretionary power to relax the rule as to the attendance at two-thirds of the lectures).
- (d) The classes in the University must be taken out in the order and during the years specified in the Time Table, unless the student shall have received written permission from the Dean to vary the order of his study. In no case will students be permitted to enter upon Hospital study, other than that set down for the second year, until the Second Examination shall have been passed.
- (e) In each examination the student will be required to pass in *all* the subjects set down for that examination; failure in any one subject will entail the loss of the examination.
- (f) In the case of failure in a subject in which practical work forms part of the examination, the student will not be re-admitted to examination until he has

produced a certificate, that, subsequent to such failure, he has attended a further course of study to the satisfaction of his teacher or teachers in such subject or subjects as he may have failed in.

- (g) In the case of failure in the final examination, the student will be required, before being re-admitted to examination, to produce a certificate as evidence of six months further attendance on clinical work at some recognized hospital or hospitals.

NOTE.—Examinations in the Faculty of Medicine will be held twice in the year, at the end of March and June respectively, on dates which will be advertised in the Calendar.

Course of Instruction and Examinations for Degrees in Medicine and Surgery.

FIRST YEAR.

Anatomy.—One course of lectures during the Winter Session, with practical work extending over the same period.

Elementary Biology.—One course of lectures and practical work during the Winter Session.

Chemistry.—One course of lectures during the Winter Session, with a second course, accompanied by practical work during the Summer Session.

Physics.—One course of lectures accompanied by practical work, extending over the Winter and Summer Sessions.

Physiology.—One course of practical work during the Summer Session.

At the end of the first winter the student who has duly followed the above courses will be eligible to present himself for the first part of the First Examination, viz., Elementary Biology. At the end of the Summer Session he will be

eligible for the second part of the First Examination, viz., Chemistry and Physics.

NOTE.—(a) The parts of this examination may be taken in any order. (b) Students who have passed the Intermediate Examination for Degrees in Science in either or both of these subjects will be exempt from further examinations in them.

SECOND YEAR.

Anatomy.—One course of lectures during the Winter Session, and one during the Summer Session, with practical work extending over the same period.

Physiology.—One course of lectures accompanied by practical work during the Winter Session.

Hospital.—Attendance on special Tutorial Classes will be required on Saturday mornings during the Winter and Summer Sessions.

At the end of the second Summer the student who has duly followed the above courses will be eligible for the Second Examination, viz., Anatomy and Physiology.

NOTE.—The certificate in Anatomy must show that the student has dissected the entire body *at least* once.

THIRD YEAR.

Medicine.—One course of lectures during the Winter Session.

Surgery.—One course of lectures during the Winter Session.

Hygiene and Public Health.—One course of lectures during the Winter Session.

Pathology.—One course of lectures during the Winter Session, with a course of practical work during the Summer Session.

Materia Medica.—One course of lectures during the Summer Session, with a practical course of instruction in Pharmacy during the same Session.

Hospital.—The course of instruction as set down in the Regulations for Hospital work must be followed.

At the end of this year the student who has been duly certified for *Materia Medica* and *Practical Pharmacy* may present himself for examination in those subjects at the end of the Summer Session.

FOURTH YEAR.

Medicine.—One course of lectures during the Winter Session.

Surgery.—One course of lectures during the Winter Session.

Therapeutics and Pharmacology.—One course of lectures during the Winter Session.

Midwifery.—One course of lectures during the Winter Session.

Forensic Medicine and Toxicology.—One course of lectures accompanied by practical work during the Summer Session.

Gynaecology.—One course of lectures during the Summer Session.

Mental Diseases.—One course of lectures during the Summer Session.

Hospital.—The course of instruction as set down in the Regulations for Hospital work must be followed.

At the end of this year the student who has duly followed the courses prescribed for the third and fourth years will be eligible to present himself for the Third Examination, viz., *Pharmacology*, *Pathology*, *Forensic Medicine* and *Public Health*.

FIFTH YEAR.

Surgical and Medical Anatomy.—One course of demonstrations extending over three months during the Winter Session.

Operative Surgery.—One course of practical instruction during the Winter Session.

Ophthalmology.—One course of lectures during the Summer Session.

Hospital (General Clinical).—The course of instruction as set down in the regulations for Hospital work must be followed.

Fever Hospital.—One course of instruction extending over not less than three months.

NOTE.—The certificate must include a statement that the student has personally taken notes of not less than six cases of fever. The notes of these cases must be presented to the examiners at the time of the examination.

Asylum Practice.—One course of instruction extending over not less than three months.

NOTE.—The student will be expected to present to the examiners at the time of examination at least four properly filled up certificates of lunacy drawn up by himself after personal examination of insane patients, and notes of two cases taken by himself, both to be certified by his teacher.

Vaccination.—The student must follow the course laid down by the instructions of the Local Government Board.

In addition to evidence that the above courses have been duly completed, the student will, on presenting himself for the final examination, be required to produce the following additional certificates :—

- (a) Of having attained his twenty-first year.
- (b) Of having during his third and fourth years performed the duties of clerk and dresser according to the rules laid down in the regulations for Hospital work.
- (c) Of having attended during at least twelve months the demonstrations given in the *post-mortem* room of a recognised Hospital, and of having acted for three months as *post-mortem* clerk.
- (d) Of having attended during three months the practice of an Obstetric Department or Hospital recognised by the University or of having attended not less than twenty cases of labour, the first five at least of which shall have been conducted under the personal supervision of a registered practitioner, and of having continued such attendance throughout the puerperal period.

- (e) Of having, during at least three months, received in either a general or special Hospital, recognised by the University, Clinical instruction in the Diseases peculiar to Women.

NOTE.—The student will be expected to present to the examiners, at the time of his examination, notes of at least six cases of this character taken by himself and certified as such by the teacher from whom he received his instruction.

- (f) Of having, during at least three months, received in either a general or special Hospital, recognised by the University, Clinical instruction in Ophthalmology.

NOTE.—the Certificate must state that the student has received personal instruction in the detection and correction of errors of refraction.

- (g) Of having received practical instruction in the administration of anæsthetics.

On presenting the above certificates, the student will be eligible to enter for the Final Examination in Medicine, Surgery, Midwifery, Gynaecology, Ophthalmology, and Mental Diseases.

On passing this examination the student will be permitted to proceed to the Degrees of Bachelor of Medicine and Bachelor of Surgery.

At the end of one year from the date of having passed this examination the candidate will be eligible to present himself for the higher Degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these Degrees will be required either :

A. To present a Thesis, embodying original observations in some subject embraced in the medical curriculum and approved by a Board of medical examiners to whom the Thesis will subsequently be submitted—on the Report of which Board the Degree will be awarded or withheld. The candidate will be examined on the subject which he has chosen for his Thesis and the examiners may require to see the notes of original observations on which the Thesis is based.

B. To pass a general examination (written and practical,) in Medicine or Surgery, according to the Degree desired, and, in addition, to show special proficiency in any one of the following subjects to be chosen by the candidate :—

For the Degree of M.D.

- (a) Infectious Diseases.
- (b) Diseases of the Chest.
- (c) Diseases of the Abdomen.
- (d) Nervous Diseases.
- (e) Diseases of Children.
- (f) Midwifery.
- (g) Pathology.
- (h) Bacteriology.
- (i) Medical Jurisprudence and Toxicology.
- (j) Public Health.
- (k) Mental Diseases.
- (l) Diseases of the Skin.

For the Degree of M.Ch.

- (a) Regional Surgery.
 - (b) Gynæcology.
 - (c) Ophthalmology.
 - (d) Diseases of the Ear, Nose and Throat.
-

REGULATIONS FOR HOSPITAL WORK.

FIRST YEAR AT HOSPITAL.

Students must attend Hospital for two hours on Saturday mornings, when a Surgical Tutorial Class will be held, and instruction given in Clinical Surgery.

SECOND YEAR AT HOSPITAL.

Out-Patient dressing, three months.

In-Patient dressing, six months.

Clinical Lectures on Surgery.

Medical and Surgical Ward Classes.

Medical Tutorial Classes (three months attendance will be required upon these before In-Patient dressing is commenced).

THIRD YEAR AT HOSPITAL.

In-Patient clerking, six months.

Clinical Lectures on Medicine.

Medical and Surgical Ward Classes.

Post-mortem clerking, three months. Attendance at post-mortem examinations and demonstrations during the year.

FOURTH YEAR AT HOSPITAL.

Clinical instruction in Medicine and Surgery.

Clinical Midwifery (twenty cases).

Gynæcological clerking, three months.

Ophthalmology, three months.

Vaccination, six weeks.

Course in Anæsthetics. Attendance on three Lectures, and the administration of Anæsthetics on ten cases.

Fever Hospital, three months.

Hospital for Mental Diseases, three months.

1900-1901.

FIRST YEAR TIME TABLE.

SUBJECTS.	Mon.	Tu.	Wed.	Th.	Fri.
WINTER SESSION.					
Chemistry.....	9.30	9.30	9.30	9.30	9.30
Elementary Biology :—					
Lectures .....	..	4.0	4.0	4.0	..
Practical .....	..	2.0	..	2.0	..
Anatomy	10.30	10.30	10.30	10.30	..
Practical Anatomy			Daily.		
Physics	11.30	..	11.30	..	11.30
,, Practical .....	..	..	..	..	2.0
SUMMER SESSION.					
Chemistry.....	9.30	..	9.30	..	9.30
Practical Chemistry	2.0	2.0	2.0	2.0	..
Physiology—Practical	10.30	10.30	10.30	10.30	10.30
Physics .....	..	9.30	..	9.30	..
,, Practical .....	..	..	..	..	2.30

SECOND YEAR TIME TABLE.

WINTER SESSION.					
Anatomy	12.0	..	12.0	12.0	12.0
Practical Anatomy			Daily.		
Physiology	10.30	10.30	10.30	10.30	10.30
,, Practical .....	..	2.30	..	..	..
SUMMER SESSION.					
Anatomy	12.0	..	12.0	..	12.0
,, Practical.....			Daily.		

THIRD YEAR TIME TABLE.					
SUBJECTS.	Mon.	Tu.	Wed.	Th.	Fri.
WINTER SESSION.					
Medicine .....	..	3.0	3.0	..	3.0
Surgery .....	..	4.0	4.0	..	4.0
Pathology	1.0	1.0	1.0	1.0	1.0
Public Health.....	3.0	..	..	..	..
SUMMER SESSION.					
Practical Pathology	2.0	..	2.0	..	2.0
Materia Medica .....	..	2.0	..	2.0	..
Practical Pharmacy .....	..	3.0	..	3.0	..

FOURTH YEAR TIME TABLE.					
WINTER SESSION.					
Medicine .....	..	3.0	3.0	..	3.0
Surgery .....	..	4.0	4.0	..	4.0
Therapeutics	3.0	..	..	3.0	..
Midwifery	4.0	..	..	4.0	..
SUMMER SESSION.					
Gynæcology .....	..	3.0	3.0	..	3.0
Forensic Medicine.....	4.0	..	4.0	..	..
„ Practical.....	..	4.0	..	4.0	..
Toxicology .....	..	..	..	..	4.0
Mental Diseases .....	..	2.0	..	2.0	..

FIFTH YEAR TIME TABLE.					
WINTER SESSION.					
Surg. and Med. Anatomy Oct. to Dec.).....	3.30	..	3.30	..	3.30
Operative Surgery	After Christmas.				
SUMMER SESSION.					
Ophthalmology	4.0	..	4.0	..	..

ANATOMY.

Professor BERTRAM C. A. WINDLE, M.A., M.D., D.Sc.
F.R.S., F.S.A.,

Lecturer on Osteology and Chief Demonstrator, WILLIAM
WRIGHT, M.B., Ch.B., M.R.C.S., L.R.C.P.

Demonstrators of Anatomy, W. E. BENNETT, F.R.C.S.
(Eng.),

J. JAMESON EVANS, M.B., C.M. (Edin.), F.R.C.S. (Eng.).

I.—Descriptive Anatomy.

The *First Year's Course* deals with Osteology, Arthrology and the Anatomy of the Upper and Lower Extremities. The lectures are delivered during the Winter Session at 10.30 o'clock, on Mondays, Tuesdays and Thursdays before Christmas, and on Wednesdays also after Christmas.

The *Second Year's Course* is partly given during the Winter, partly during the Summer Session. During the *Winter* lectures are delivered on the Thorax, Abdomen, and Head and Neck, excluding the Brain and Organs of Special Sense, at 12 o'clock on Mondays, Wednesdays, Thursdays and Fridays before Christmas, and on the same days with the exception of Wednesdays after that date. During the *Summer* lectures will be delivered on the Central Nervous System and the Organs of Special Sense on Mondays, Wednesdays and Fridays at 12 o'clock.

All these courses are accompanied by Demonstrations and Classes specially arranged to follow up the instruction given in the Lecture Theatre.

The course of Lectures on *Human Embryology* is given during the second Winter Session, on Thursdays at 3 p.m.

II.—Practical Anatomy.

The Dissecting Room is open during term time from 9 a.m. to 5 p.m., except on Saturdays, when it is closed at 1 p.m. One or more of the Staff of the Department is always in charge of the room and ready to help Students finding themselves in any difficulty with their parts. Information as to the detailed working of the Department will be found in the Guide which is presented to every Student on entering for a course of Anatomy.

A list of the days and hours at which Demonstrations and Classes are to be held will be found on the Notice Board at the beginning of each term.

III.—Medical and Surgical Anatomy.

Lecturer on Applied Anatomy, WILLIAM F. HASLAM,
F.R.C.S. (Eng.),

A Course of Lectures and Demonstrations for Students in their fifth year will be given by the Lecturer on Applied Anatomy on Mondays, Wednesdays and Fridays, from October to December inclusive, at 3.30 p.m.

The Museum, which is open to all students, contains a large collection of frozen sections and dissections mounted in spirit, also of specially prepared and marked bones. There are a number of embryological models.

PHYSIOLOGY.

Professor E. W. WACE CARLIER, B.Sc., M.D.,
F.R.S. (Edin.)

(Demonstrator, J. H. RUODES, M.B., Ch.B. (Edin.).)

I.—Systematic Physiology.

A Course of Lectures in Physiology will be delivered at 10.30 a.m. each day, except Saturday, throughout the Winter Session. It will consist of at least 100 lectures.

The Course will comprise :—

- (1) General Chemistry of the Animal Body.
- (2) Structure, Chemistry and Physiology of the Cell and of the Simple Tissues.
- (3) Muscle and Nerve.
- (4) General Nutrition, including circulation of the blood and lymph, respiration (voice and speech), alimentation, nutrition of the tissues, internal secretions, excretion and the minute structure of the organs concerned.
- (5) Animal Heat, its production and regulation.
- (6) The Senses and Sense Organs.
- (7) The Central Nervous System, its structure and functions.
- (8) Reproductive System.

II.—Practical Physiology.

The Course will extend over one Summer and one Winter Session.

HISTOLOGY.—This Class will meet in the Physiological Laboratory every day, except Saturday, throughout the Summer Session from 10.30 to 12.30. Each Student will have the use of a microscope and be supplied with all re-agents, but he will be expected to furnish himself with slides, cover-glasses, a razor and other sundries.

Each Student will prepare and study microscopical specimens of most of the tissues and organs of the body, and will receive practical instruction in the use of the microscope and in elementary technique.

III.—Experimental Physiology.

The Class will meet in the Physiological Laboratory one day of each week from 2.30 to 4.30 during the first half of the Winter Session.

Each Student will perform the simpler experiments, illustrating the physiology of muscle, nerve, heart and reflex-action, and will receive practical instruction in the use of the sphygmograph, cardiograph, stethograph, laryngoscope, and ophthalmoscope.

The Student must supply himself with a dissecting case.

IV.—Physiological Chemistry.

This Class will meet in the Physiological Laboratory one day each week during the latter half of the Winter Session from 2.30 to 4.30.

Each Student will perform the qualitative and quantitative analyses of the urine in its normal and abnormal conditions with special reference to clinical work, with additional practical exercises on the chemistry of the proteoids, carbohydrates, food stuffs and their digestion, blood and bile.

V.—Advanced Practical Physiology.

FACULTY OF SCIENCE.

The Physiological Laboratory is open daily, except Saturday, during both Summer and Winter Sessions from 10 a.m. to 5 p.m. for the prosecution of original research. Application to be made to the Professor.

CHEMISTRY.

Professor PERCY F. FRANKLAND, Ph.D., Würzburg,
B.Sc., Lond., F.R.S.

Lecturer, CHARLES F. BAKER, Ph.D., B.Sc.

Demonstrator, WILLIAM R. INNES, M.Sc., Ph.D.

Lecture Course on General Inorganic Chemistry.

The Lectures are delivered at 9.30 a.m. on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays, during the Winter Session.

The Course will include an introduction to the Science of Chemistry, and a description of the properties of the more common elements (non-metallic and metallic), as well as of their more important compounds.

At least one of the above meetings of the class in each week is devoted to tutorial work. Attendance at this tutorial class is compulsory, as is the performance of the weekly exercises set by the Professor.

Lecture Course on Organic Chemistry.

The Lectures are delivered at 9.30 a.m. on Mondays, Wednesdays, and Fridays, during the Summer Session.

The Course includes an introduction to the study of Organic Chemistry, and a description of the methods of preparation, properties, and relations of the more important groups of carbon compounds.

Practical Chemistry.

The Class meets at 2 p.m. on Mondays, Tuesdays, Wednesdays, and Thursdays, during the Summer Session.

The practical work in the laboratory is intended to supplement the instruction given in the lectures, and to make the student personally familiar with the preparation of pure substances, and with the elements of qualitative and quantitative analysis.

Sanitary Chemistry.

Laboratory Course (Times by arrangement).

B.Sc. or Diploma in Public Health.—The Course extends over six months (not less than six hours weekly), and includes the analysis of air, water, milk, butter, and food-stuffs.

FEE:—Eight Guineas.

PHYSICS.

Professor J. H. POYNTING, Sc.D., F.R.S.

Assistant Lecturer, G. E. ALLAN, B.Sc. (Lond.)

During the Winter Session the Lectures will be on Mondays, Wednesdays and Fridays, at 11.30.

The Practical Class, two hours weekly, can be attended either on Tuesday or Thursday, from 2 till 4.

During the Summer Session the Lectures will be on Tuesdays and Thursdays, at 9.30.

The Practical Class, Friday, 2 till 4.

Syllabus of Course.*Properties of Solids—*

Sticking and sliding friction. Strains and stresses. Bulk strain and shear strain. Various kinds of permanent change of shape and rupture. Crystalline and amorphous solids.

Properties of Liquids—

Viscosity. Compressibility. Surface tension.

Properties of Gases—

Compressibility. Viscosity.

Kinetic theory of matter. Diffusion, solution, osmotic pressure.

Heat—

Temperature. Mercury in glass thermometer. Determinations of high and low temperature. Expansion of solids and liquids. Circulation and convection in liquids. Expansion of gases at constant pressure and increase of pressure at constant volume. Gas thermometers. Circulation and convection in gases. Movements of the atmosphere.

Quantity of heat. Specific heat and simple modes of measuring it.

Conduction of heat. Conductivity.

Heat a form of energy. The forms of energy and their transformations according to fixed rates of exchange. The conservation of energy, Joule's method of determining the mechanical equivalent of heat. The nature of heat on the kinetic theory of matter. Limitation in the amount of heat which can be transformed to work.

Change of state. Latent heat. Liquid vapour change. Evaporation. Boiling vapour pressure. Dependence of boiling point on pressure and explanation. Modes of measuring vapour pressure. Explanation of vapour pressure on the kinetic theory. Water vapour in the atmosphere. Hygrometers. Cloud. Fog. Dew. Solid-liquid change. Melting points. Change of volume on melting. Effect of pressure on melting point. Regelation.

Radiation. High and low radiating and absorbing powers. Comparison of properties of radiation from hot bodies and properties of light. Identification. The spectrum. Substances absorb the radiations which they can emit. Dark lines in solar and stellar spectra.

Light—

Light a form of energy. Rectilinear propagation. Shadows. Eclipses. Inverse square law. Simple Photometers. Reflection, refraction, and dispersion. Velocity of light.

Light a form of wave motion. Illustrations of interference. The diffraction grating. Polarisation of light.

Mirrors. Prisms. Lenses. The eye. Simple forms of telescope and microscope.

Sound—

Sound arises from vibrating sources which send out longitudinal waves in air. Characteristics of the waves corresponding to loudness, pitch, and quality. Velocity of sound in air, and other media. Determinations of frequency. Resonance; its use to analyse sounds. Harmonics and upper partials. Quality.

Transverse vibrations of strings. Vibrations of air in pipes. Other vibrating sources.

Beats. Concord and discord. Combination tones.

Magnetism—

Properties of magnets. The two poles; their equality and inseparability. Magnetisation by induction. Methods of making magnets. Inverse square law. Magnetic fields and lines of force. The earth as a magnet. Declination, dip, and intensity.

Electricity—

The two kinds of electrification and simple modes of producing them. Conductors and Insulators. The gold leaf Electroscope. Electrification by induction. Frictional Electrical Machines. The Electrophorus. The Wimshurst Machine. The Leyden Jar. Production and disappearance of the two electrifications always in equal quantities. The electric field, considered as the seat of electric strain, electric force, and electric energy. The inverse square law. Potential and capacity. Distribution on conductors.

Electro-magnetism—

Electric discharge and the magnetic effects accompanying it. Electro-magnetic waves. Electric current. Voltaic and Storage cells. The magnetic properties of current circuits. The ampere. Galvanometers and amperemeters. Electric motors. Ohm's Law. Resistance. The heat developed in the circuit. Joule's Law. The ohm. The volt. Electrolysis. Electro-chemical equivalents. The induction of currents. Lenz's Law and Faraday's Law. The Dynamo. The Induction Coil.

ELEMENTARY BIOLOGY.

Professor T. W. BRIDGE, D.Sc., Cantab., F.L.S.

(Professor of Zoology and Comparative Anatomy).

Assistant Lecturer and Demonstrator,

WALTER E. COLLINGE, F.Z.S.

A Course of about Fifty Lectures will be given during the Winter Session.

SYLLABUS.

- (a) Living and non-living matter. Distinctive properties of living matter or protoplasm, as illustrated by the *Proteus-animalcule* or *Amœba*. The Cell. Comparison

of the unicellular *Amœba* with the complex multicellular Frog. Origin of the Frog. The egg-cell or ovum. Segmentation of the ovum and the subsequent formation of structurally and physiologically different groups of cells or tissues. Structure of the various elementary tissues of the Frog. Epithelia, connective, muscular, and nervous tissues. Combination of tissues to form organs.

- (b) The anatomy and histology of the various systems of organs in the Frog, and the elementary physiology of the organs of digestion, circulation, and excretion. Physiological division of labour and morphological differentiation of structure.
- (c) General anatomy and histology of the following typical animals, viz. :— *Amœba*, *Vorticella*, *Hydra*, Earth-worm (*Lumbricus*), Dogfish (*Scyllium*), Frog (*Rana*), and the general structure of the Rabbit (*Lepus*).
- (d) Non-sexual and sexual reproduction. Ova and spermatozoa. Oögenesis and spermatogenesis. Parthenogenesis. Fertilization and segmentation of the ovum. Heredity. Segmentation of the ovum in *Amphioxus* and the Frog. Development and larval history of the Frog, treated in an elementary fashion.
- (e) Distinction between plants and animals. Structure and properties of the vegetable cell, as illustrated by the unicellular *Hamatococcus*. Ferments—organized and unorganized. The yeast-plant (*Saccharomyces*) and its relation to alcoholic fermentation. The structure, distribution, and modes of reproduction of "Bacteria." The relations of "Bacteria" to various fermentative processes. Multicellular plants and cell-differentiation.

Laboratory Class.

In the Practical Class the above-mentioned organisms will be dissected or microscopically examined.

Each student will be provided with the use of a microscope and chemical reagents.

Lecture Days.—Tuesday, Wednesday and Thursday at 4.0, commencing on Thursday, October 4th, 1900.

Practical Class.—Tuesday and Thursday afternoons, from 2.0 to 4.0.

Vertebrate Morphology.

A Course of Lectures on Vertebrate Morphology will be given during the Winter Session. Attendance on this Course will be required of *all* Candidates for the First Fellowship Examination of the College of Surgeons, England, with the exception of those who have previously attended since registration either the Middle or more advanced Courses. *Students intending to take out this Course are requested to send in their names to the Professor during the first week of the Winter Session.*

Lecture Days and Hours to be fixed by arrangement with the Class.

FEE:—£2 12s. 6d., including Laboratory work.

MEDICINE.

Professor R. SAUNDBY, M.D., LL.D., F.R.C.P.

Professor ALFRED H. CARTER, M.D. (Lond.), F.R.C.P.

Assistant: JAMES RUSSELL, M.A., M.D. (Cantab.), M.R.C.P.

Lecture Days.—Tuesday, Wednesday, and Friday, at 3 p.m.

This course extends over two Winter Sessions, and includes—

1. An explanation of the nomenclature and classification of disease. The principles of etiology, symptomatology, diagnosis, prognosis, and treatment of disease in general.

2. A description of special diseases, together with their causation, prevention, diagnosis, prognosis, and treatment.

Specific Infectious Diseases.

Diseases of the Nervous System, Functional and Organic; of the Brain, Spinal Cord, and Peripheral Nerves.

Diseases of the Muscles.

Diseases of the Heart and of the Blood Vessels.

Diseases of the Respiratory System, Functional and Organic; of the Larynx, Trachea, Lungs, and Pleural Sacs.

Diseases of the Digestive System.

Diseases of the Kidneys.

Constitutional Diseases.

The Intoxication and Sunstroke Diseases of the Blood and Ductless Glands.

Diseases due to Animal Parasites.

Diseases of the Skin.

The Course will be illustrated by specimens from the Pathological Museum, and by drawings, diagrams, and charts.

SURGERY.

Professor BENNETT MAY, M.B., B.S., (Lond.), F.R.C.S. (Eng.)

Professor GILBERT BARLING, M.B., B.S., (Lond.), F.R.C.S. (Eng.)

Assistant—GEORGE HEATON, M.A., M.B. (Oxon.), F.R.C.S. (Eng.)

Lecture Days.—Tuesday, Wednesday, and Friday, at 4 p.m.

This Course, extending over two Winter Sessions, is devoted to a systematic consideration of the Principles and Practice of Surgery. It includes a complete description of—

I.—General Principles, as illustrated by Repair and its aberrations.

Inflammation and its results.

The various forms of blood poisoning.

Tuberculosis. Syphilis.

Tumour formations, &c.

II.—The Surgery of Special Regions as far as possible.

The Assistant to the Chair of Surgery gives tutorial instruction to Senior Students, and holds preparatory classes for the final Examination. Written Examinations are held at stated periods.

The Course will be illustrated by Specimens from the Pathological Museum, and by drawings, diagrams, and charts.

PATHOLOGY AND BACTERIOLOGY.

Professor R. F. C. LEITH, M.B., B.Sc., M.A., F.R.C.P.E.,

Assisted by

C. LEEDHAM-GREEN, M.D., F.R.C.S.,

W. D'ESTE EMERY, M.D., B.Sc.,

J. DOUGLAS STANLEY, M.D., M.R.C.P.

(Demonstrator of Morbid Anatomy).

A.—Course for Medical Students (M.B., B.Ch., and Conjoint Board).

This Course consists of two parts, viz., (1) a Systematic Course of Lectures on General and Special Pathology and Bacteriology, and (2) a Practical Course upon the same subjects.

I.—The Systematic Course.

The Lectures commence in October, and are given daily, at 1 o'clock. They are fully illustrated by Macroscopic, Microscopic and Lantern Preparations, and a Special Series of Demonstrations on Morbid Anatomy is also given weekly. The Lectures include :—

I. GENERAL PATHOLOGY :—

- (1) Altered conditions of the circulation.
- (2) Inflammation.
- (3) Retrogressive Disturbances of Nutrition.
- (4) Tumours.
- (5) Animal Parasites.
- (6) Pathogenic Bacteriology.

2. SPECIAL PATHOLOGY :—

The systematic study of the Etiology, Morbid Anatomy, and Histology of the diseases of the systems and organs of the body.

II.—The Practical Course.

This Class commences in May, and meets thrice weekly, each sederunt occupying two hours. The Histological and other Methods of practical pathological investigation will be studied, and the various diseased organs and tissues will be examined in detail, both macroscopically and microscopically by each student. He will also do some practical work in Elementary Bacteriology.

Each student is supplied with a high-class microscope provided with lenses suited for bacteriological work. He is also provided with all the necessary re-agents and apparatus.

B.—Course of Advanced Bacteriology.

This Class begins in January, and meets thrice weekly until the end of March, each sederunt occupying two hours. In addition there will be special meetings in sections according to arrangement. This Course will qualify for the various Diplomas and Degrees in Public Health of this University and other Bodies. It will consist of lectures, demonstrations, laboratory instruction, and practical work in Bacteriology, especially in relation to disease, public health, its application to various industries, the disposal of sewage, &c.

It includes :—

I. GENERAL.—Methods of Sterilisation. Preparation of Culture Media. Isolation and Cultivation of Germs. Methods of Examination, staining, &c., of Bacteria. The separation of their products, &c.

II. SPECIAL.—(1) The systematic study of the various pathogenic and the more important non-pathogenic bacteria in regard to cultural and morphological characters, methods of producing disease, antitoxin treatment and immunity. (2) The examination of water, milk, foods, &c. (3) Antiseptics and sterilisation in detail, &c., &c.

A high-class microscope, with lenses suitable for Bacteriological work, is provided for each member of the class.

FEE :—Four Guineas.

INCIDENTAL FEE :—One Guinea.

C.—Course of Clinical Pathology & Bacteriology.

A Course suited to qualified medical men will be given in the Winter Session, commencing in October, and lasting about two months. Hours of meeting, 4 to 5.30, twice or thrice weekly. It will be devoted to the pathological and bacteriological methods of practical importance in the diagnosis of disease in hospital or private practice. It will include demonstrations and practical work in—

- (1) Histological Methods for the examination of tumours, pieces of tissue and uterine scrapings.
- (2) The examination of the urine, chemically and microscopically.
- (3) The examination of the fæces.
- (4) The examination of the gastric contents, for free HCl, for disintegrated blood, &c.
- (5) The examination of the sputum.
- (6) The examination of fluids obtained by puncture of serous and other effusions, by lumbar puncture, by puncture of echinococcal and other cysts.
- (7) The examination of the blood.
- (8) A short consideration of those bacteria commonly met with in pathological processes in man, *e.g.*, the Staphylococci and streptococci, the gonococcus, the pneumococcus, the typhoid and coli bacillus, the diphtheria bacillus and the tubercle bacillus.

FEE :—£3 3s.

The Pathological and Bacteriological Laboratory is open daily from 9 a.m. till 6 p.m. for the prosecution of private research, under the direction of Professor Leith and his assistants, to whom applications should be made.

The Pathological Museum is open daily, from 9 a.m. till 5 p.m., under the direction of Professor Leith. Several type-written catalogues, containing descriptions and particulars of the specimens, are available for consultation.

HYGIENE AND PUBLIC HEALTH.

Professor A. BOSTOCK HILL, M.D., D.P.H. (Camb.), F.I.C.

Lecture Day.—Mondays, at 3 p.m., during the Winter Session.

This Course will include instruction in Hygiene as required for the ordinary Pass Examination, and will also be specially adapted to the requirements of candidates for degrees and diplomas in Public Health and State Medicine. The Lectures will be illustrated by experiments, diagrams, and a complete set of models. In connection with the Department there is a collection of Sanitary Appliances open to all students attending this class.

The subjects treated will be as follows:—

Introductory, aim and scope of Hygiene, results already obtained.

Water supply—varieties of—quantity and quality of water.

Diseases produced by bad water. Water Analysis.

Air and Ventilation, Impurities of Air, Standard of Purity, Natural and Mechanical Ventilation, Appliances.

Food and Diet, Unwholesome Food, Adulteration of Food, Characteristics of good Meat, Fish, &c. Diseases of Animals in relation to the Health of Man.

The Soil in relation to Health.

The Dwelling and Sanitary appliances in connection therewith.

Drainage and Construction, Scavenging, Disposal of Sewage and Refuse.

Climate and Meteorology.

Infectious Diseases and Methods of Disinfection, Nature of Contagia, Immunity, Isolation, Quarantine, Vaccination.

Statistics in relation to Health.

Offensive Trades.

MATERIA MEDICA AND PHARMACY.

Lecturer, J. COOLE KNEALE, L.R.C.S., L.R.C.P. (Edin.),
M.P.S.

Demonstrator (*vacant*).

Lecture Days.—Tuesdays and Thursdays, at 2 p.m., during the Summer Session.

Materia Medica comprises the subjects of Pharmacognosy and Pharmacy.

Instruction in Materia Medica is given in—

- (a) A Course of twenty-six Lectures.
- (b) Twenty-six Practical Pharmacy Classes.
- (c) Thirteen Tutorial Classes.

A.—Lectures on Materia Medica.

This Course includes the natural history, sensible and chemical properties and modes of administering remedies, ordinarily so-called. Such remedies consist of

- (a) Inorganic Substances.
- (b) Chemical Products.
- (c) Vegetable Substances.
- (d) Animal Substances.

B.—Practical Classes.

Practical instruction is given in the following subjects, which cannot be satisfactorily taught in lectures :—

- (1) Pharmacy, or the processes for obtaining the Pharmaceutical preparations of drugs.
- (2) Prescription Writing.
- (3) Dispensing, or the making up of medicines in forms suitable for administration in disease.

C.—Tutorial Classes.

These will consist of a recapitulation of the Lectures and Practical Classes.

Students have access to the Materia Medica Museum, where facilities are afforded for the practical examination of specimens.

The Museum contains (1) a collection of the official and officinal drugs, organic and inorganic ; (2) a collection of drugs from all sources for lecture purposes ; (3) a collection of the whole of the galeical preparations of the British Pharmacopœia ; (4) a complete set of apparatus used in Pharmaceutical work.

THERAPEUTICS.

Professor ARTHUR FOXWELL, M.A., M.D. (Cantab.),
F.R.C.P.

Lecture Days.—Mondays and Thursdays, at 3 p.m., during the Winter Session.

Syllabus.

The relation of Therapeutics to Natural Selection. Preventive, Etiological, Symptomatic and Individual treatment.

Efficacy in the use of each method depends upon accuracy of diagnosis : the first two need also a knowledge of Pathology ; the fourth, sympathetic insight into human character.

Varieties of Treatment :—Hygiene (personal and municipal).

Regulation of Habits.

Diet.

Rest.

Exercise (including Massage, Assisted Movements, and Gymnastics).

Bathing and Drinking Spas, their efficacy and its rationale ; the choice of a Spa.

Climate.

Heat and Cold.

Electricity.

Operations.

Drugs ; Indications for their use ; Modes of Administration ; Doses, and the circumstances which

modify these ; Systematic Examination of the actions of various drugs in health on the tissues and systems of the body ; consideration of their consequent uses in disease.

The art of Prescribing.

MIDWIFERY.

Professor EDWARD MALINS, M.D., Edin., M.R.C.P.

Assistant, C. E. PURSLOW, M.D., M.R.C.P.

Lecture Days.—Mondays and Thursdays, at 4 p.m., during the Winter Session.

This course comprises a systematic exposition of the anatomy and physiology of the pelvis and organs of generation in the female ; the phenomena, mechanism, and management of natural labour and the puerperal state ; the consideration of unnatural and difficult parturition, with the specific diseases that follow delivery and the signs, symptoms, and disorders of pregnancy.

GYNÆCOLOGY.

Professor JOHN W. TAYLOR, M.D., F.R.C.S. (Eng.)

Assistant, C. E. PURSLOW, M.D., M.R.C.P.

Lecture Days.—Tuesdays, Wednesdays, and Fridays, at 3 o'clock, during the Summer Session.

SYLLABUS.

General Anatomical Considerations :

The boundaries and supports of the Peritoneal Cavity.
The Pelvic Diaphragm and Pelvic Floor.
The Peritoneum.

The Anatomy of the Internal Genitalia :

Ovulation.

The Retro-peritoneal Vessels.

The Parovarium.

Normal Menstruation :

Amenorrhœa.

Menorrhagia.

Dysmenorrhœa.

Gynæcological Examination.

Diseases of the Vulva.

Injuries and Diseases of the Vaginal Entrance.

Diseases and Injuries of the Vagina.

Genital Atresia and Genital Doubling.

(Vaginal and Abdominal Section.)

Diseases of the Uterus :

Inflammatory Diseases of the Uterus.

Adenomatous Disease of the Uterus.

Displacements of the Uterus.

Inversion of the Uterus.

Myoma of the Uterus.

Cancer and Sarcoma of the Uterus.

Diseases of the Ovaries :

Inflammation of the Ovaries.

New Growths—

Ovarian Cystoma.

Ovarian Dermoids.

Ovarian Papilloma.

Ovarian Fibroma.

Ovarian Sarcoma and Carcinoma.

Parovarian Cysts.

Broad Ligament Tumours.

Diseases of the Fallopian Tubes :

Gonorrhœal Salpingitis.

Tubercular Salpingitis.

New Growths of the Fallopian Tubes.

Tubal Pregnancy and Intra-peritoneal Hæmatocele—

Tubo-Abdominal Pregnancy.

Tubo-Ligamentary Pregnancy.

Tubo-Uterine Pregnancy.

Demonstrations.—The Assistant holds a class for instruction in Midwifery and Gynæcology for students preparing for their final examinations, on Tuesdays, at 12 noon throughout the Winter and Summer Sessions.

FORENSIC MEDICINE & TOXICOLOGY.

Forensic Medicine.

Professor J. T. J. MORRISON, M.A., M.B., B.C. Cantab.,
F.R.C.S. (Eng.)

Lecture Days.—Mondays and Wednesdays, at 4.0 p.m., during the Summer Session.

The Course treats of the several branches of Legal Medicine necessary to the medical practitioner for his guidance in Medico-Legal Inquiries, and for giving evidence in civil and criminal causes in Courts of Justice.

SYLLABUS.

The scope of Forensic Medicine. The process of law before Coroner, Magistrate, and Judge. Legal responsibilities and duties of medical men. Medical Evidence.

Sudden death. The causes and signs of death. Determination of the date of death. The post-mortem as a medico-legal inquiry.

Identification of human remains. Determination of age, sex, stature, and personal peculiarities.

Death by violent causes—drowning, hanging, strangulation, suffocation, and smothering; wounds and mechanical injuries; burns and scalds; explosives; lightning; cold; starvation. Indications of accident, suicide, or homicide.

Wounds and other personal injuries; question of accident or assault; compensation claims in such cases.

Offences against chastity; rape; unnatural offences.

Criminal abortion. Live birth. Infanticide.

Malapraxis and malingering.

Life Assurance.

The Lectures will be supplemented by a practical Course of laboratory work.

Toxicology.

Lecturer, A. BOSTOCK HILL, M.D., D.P.H., (Camb.),
F.I.C.

Lecture Day.—Fridays, at 4 o'clock, during the Summer Session.

This course comprises a discussion on the mode of action of poisons and the various circumstances influencing this; classification of poisons; methods of procedure in cases of poisoning; detection and estimation of poisons; symptoms; post-mortem appearances observed, and treatment to be adopted in cases of poisoning.

Practical Toxicology.

A Course of Practical Toxicology is provided in the Laboratory of the County Analyst. This course extends over a month. Professor Bostock Hill will arrange with students as to the days and hours of their attendance.

MENTAL DISEASES.

Professor E. B. WHITCOMBE, M.R.C.S.

Lecture Days:—During the Summer Session, Tuesdays and Thursdays, at 2 p.m.

The Course will consist of an account of the various forms of Mental Disease, including their history, etiology, pathology, symptoms, and treatment. Cases will be exhibited, and pathological specimens utilised as far as possible. The medico-legal aspect of insanity will be included in the course.

OPERATIVE SURGERY.

Professor JORDAN LLOYD, M.B., M.S. (Durh.), F.R.C.S.
(Eng.)

A class of Operative Surgery, consisting of at least ten demonstrations, is held each Winter, after Christmas. All the chief operations in surgery are performed on the dead body by the Professor, and also by members of the Class.

OPHTHALMOLOGY.

Professor PRIESTLEY SMITH, M.R.C.S.

Lecture Days.—Mondays and Wednesdays, at 4 p.m., during the Summer Session.

These lectures deal systematically with the nature and treatment of the principal diseases of the eye. The several parts of the subject are taken in the following order:—

1. Diseases of the Conjunctiva.
2. Diseases of the Cornea.
3. Diseases of the Uveal Tract: Iritis, Cyclitis, Choroiditis.
4. Sympathetic Ophthalmia.
5. Glaucoma.
6. Cataract.
7. Diseases of the Retina, Optic Nerves, Tracts, and Centres.
8. Errors of Accommodation.
9. Errors of Refraction.
10. Diseases of the Motor Apparatus.
11. Diseases of the Eyelids and Tear-passages.
12. Diseases of the Orbit.

In connection with this Course, Clinical demonstrations and practical instruction in the methods of examining the eye, are given in the Eye Department of the Queen's Hospital.

TROPICAL DISEASES.

Should any students require instruction in this subject a course of twelve lectures will be delivered during the Summer Session, by Professor Saundby.

The course will consist of a description of the special diseases of tropical countries, and will be illustrated by pathological specimens, diagrams, &c.

FEE:—£1 1s.

DEGREE AND DIPLOMA IN PUBLIC HEALTH.

Graduates in Medicine of this University may become candidates for the degree of BACHELOR OF SCIENCE IN PUBLIC HEALTH, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University and they must, in addition, have attended a three months' course of Geology in the University.

Regulations for Diploma in Public Health. General Conditions.

- 1.—All Candidates must be registered under the Medical Act.
- 2.—The Examinations will be held in the months of January and July, and will consist of two parts. No Candidate will be admitted to Part II. until he has passed Part I.
- 3.—Candidates may enter for Parts I. and II. separately or at the same time.
- 4.—The Examination in each part will be written, oral and practical.
- 5.—Candidates intending to present themselves for either part of the Examination must give fourteen

days' notice in writing to the Registrar of the University.

6.—The Fee for each part of the Examination is £5.

Conditions of Admission to the Examinations.

I.—For Candidates registered under the Medical Act on or *before* the 1st of January, 1890.

Candidates so registered will be allowed to sit for examination on producing certificate of registration.

II.—For Candidates registered under the Medical Act *after* the 1st of January, 1890.

Candidates will be admitted to examination in Part I. on producing evidence :—

- (1) Of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery and Midwifery, for a period of twelve months.
- (2) Of having attended, after obtaining such registrable qualification, a six months' practical course of Hygienic Chemistry in a Laboratory recognised by the University.
- (3) Of having attended a course of Bacteriology.

Candidates will be admitted to Part II. of the examination on producing evidence :—

- (1) Of being at least 24 years of age.
- (2) Of having during a period of six months after obtaining a registrable qualification, practically studied out-door Sanitary work, under the Medical Officer of Health of a county or large urban district with a population of at least 50,000, or under the Medical Officer of Health of two or more combined districts

with a similar population, or else held appointment as Medical Officer of Health under conditions not requiring the possession of a Diploma in Public Health.

- (3) Of having attended the practice of a hospital for Infectious Diseases, recognised by the University, either before or after obtaining his registrable qualification.

The whole of the instruction, with the exception of out-door Sanitary work, required for the Degree and Diploma in Public Health can be taken out in the University.

FEES :—

Sanitary Chemistry	...	...	£8	8	0
Bacteriology	...	...	4	4	0
Incidental Fee	...	...	1	1	0
Geology	...	...	2	2	0

Composition Fee for the whole course of instruction for Bachelor of Science and Diploma in Public Health (including incidental fee): Thirteen Guineas.

Syllabus for the Examinations.

PART I.

1. Physics in their application to Health, and with reference to Ventilation and Heating, Water Supply and Sewerage.
2. Chemistry in its relation to Air, Water, Food, Soil, and Sewage.
3. Microscopical Examinations of Air, Water, Food, Articles of Clothing, Parasites, &c.
4. Bacteriology in relation to Sanitary Work.

PART II.

1. The Origin, Pathology, and Prevention of Disease ; with special reference to Infectious Disease.

2. Effects of Unwholesome Air, Water, and Food.
 3. Diseases of Animals in relation to the Health of Man.
 4. Influence of Occupation—Unhealthy Trades.
 5. Influence of Climate.
 6. Sanitary Administration in relation to requirements of Houses and other buildings, Sanitary Engineering.
 7. Construction, Arrangement, and Management of Hospitals.
 8. Statistics in relation to Health.
 9. Sanitary Law, including Bye-laws, Orders and Regulations.
 10. Duties of Sanitary Officers.
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REGULATIONS TO BE OBSERVED BY STUDENTS.

1.—Students on applying to enter any class are required to sign an engagement that they will observe the Ordinances of the University and conform to such regulations as have been or may be made for the maintenance of order in the University, and in the classes they attend.

2.—Students who have passed the Matriculation examination or an examination accepted by the University as the equivalent of the Matriculation are eligible to become candidates for Degrees in the University; such candidates are required to sign the Register of Matriculated Students, and after registration become Undergraduates of the University. Undergraduates enjoy the status of Membership of the University and are entitled to the privileges of the Guild of Undergraduates. Undergraduates are required to wear academic dress when in attendance upon University lectures. Students who are not Undergraduates are not entitled to wear academic dress.

3.—Students are not permitted to be in the Building before 8.45 a.m., nor after 6 p.m., unless attending classes or the meetings of some University Society.

4.—All Students are required to conduct themselves in a quiet and orderly manner whilst in the Building, not only during lecture hours, but on entering and leaving the building.

5.—Smoking is prohibited, except in the Students' Common Room and the Dissecting Room. Students are not permitted to loiter about in the corridors or front hall.

6.—Card playing is prohibited in any part of the University.

7.—Students committing any damage to the Building, or property, will be required to pay for making good the same, and may be excluded from attendance at the University till payment is made.

8.—Students are required to attend punctually and regularly at the lectures and classes for which their names are entered.

9.—When a Student has been absent it is desirable that he should report the cause of his absence to the Professor on his return to the class. In the event of illness or unavoidable absence notice should be sent to the Dean as soon as convenient.

LIBRARY REGULATIONS.

1.—The Library is open daily during the Session from 9 a.m. to 6 p.m., except on Saturdays, when it is closed at 1 p.m. It is closed at 5 p.m. during the vacations. It is also closed from the middle of August to the middle of September for cleaning purposes.

2.—The Library being set apart expressly for study, *all conversation is strictly prohibited.* Students are required to sit at the tables, and are not permitted to stand about in any part of the Library.

3.—Students are permitted to take books from the shelves, but they are to be *returned to the Librarian* and are not to be re-placed upon the shelves by the readers.

4.—The Library is to be used by *present day students, for reference and study only*, and no books, pamphlets or journals, &c., are to be taken from it, except by members of the Teaching Staff.

5.—Certain valuable books of reference (including Dictionaries and Encyclopædias), as indicated by the Council, are not allowed to be taken from the Library. Current Journals, Transactions of Societies, &c., are not allowed to be taken from the Library until after the publication of a succeeding part.

6.—In the event of a book being damaged by scribbling, tearing, &c., the person damaging it will be required to supply another copy in its place to the satisfaction of the Council. Any defect in a printed book should be pointed out to the Librarian.

7.—Books borrowed from the Library must be returned to the Librarian before the expiration of 15 days, subject to a renewal for a further period of 15 days, unless required by another reader.

8.—All books, pamphlets, &c., in the hands of borrowers must be returned to the Librarian on or before the last day of the Session.

9.—The Librarian is authorised to exclude from the privileges of the Library any person infringing its regulations.

LOCKERS FOR BOOKS, &c.

Lockers are provided in the locker room (first floor), and in the hat and coat room of the Medical Department, to enable students to preserve their books and papers in safety, at a charge of one shilling for the Summer Session, two shillings for the Winter Session, or two shillings and sixpence per Year. Each student will be supplied with a key, upon which a deposit of one shilling will be charged. The key must be delivered up on or before the last day of the Session for which payment has been made, or the deposit will be forfeited.

A master-key of all the lockers is kept in the office.

**SCHOLARSHIPS AND PRIZES CONNECTED WITH
THE FACULTY OF MEDICINE.****Ingleby Scholarships.**

One or more Ingleby Scholarships, founded in memory of the late Dr. Ingleby, formerly Professor of Midwifery in the Queen's College, are offered annually after examination in Obstetric Medicine and Surgery, and Diseases of Women and Children. These Scholarships are open to students who have completed two years of their curriculum in the University. The examination is held in the month of July, and full particulars may be obtained on application to the Dean of the Medical Faculty.

Sydenham Scholarships.

1. One or more Scholarships of the value of £42 each will be offered annually.

2. The Scholar or Scholars will be elected by vote of the Council on the recommendation of the Board of Studies of the Faculty of Medicine.

3. The Scholarships are limited to the orphan sons of legally qualified Medical Men on entrance as first year Students of the University.

4. The orphan sons of former Students of the Birmingham Medical School will have priority of election.

5. No Sydenham Scholar will be elected whose age exceeds 23 years on the day of election.

6. The Scholarship may be held for three years, subject to good behaviour ; and one-third of the Scholarship will be paid annually.

7. All applications for a Sydenham Scholarship should be addressed to the Dean of the Medical Faculty on or before the 3rd of May or October in each year, and each candidate is required to furnish such evidence of eligibility as he considers necessary.

Sands Cox Scholarship.

1. A Sands Cox Scholarship of the value of £42 will be offered annually.

2. This Scholarship will be awarded by the Council to the Student who, on entrance as a first year's Medical Student of the University, shall pass the best examination in the following subjects:—

(a) Latin, the book prescribed for the Matriculation of the University preceding the Examination ; Grammar ; and Easy Composition.

(b) One of the Modern Languages, French, German, or Italian ; Unseen Translation ; Grammar ; and Composition.

(c) An English Essay.

(d) Mathematics ; Euclid, I.—IV. ; Arithmetic and Algebra as far as Quadratic Equations.

N.B.—Candidates will be allowed to offer themselves for *viva voce* examination in Higher Mathematics, Higher Latin, or in a second Modern Language in addition to the written examination.

3. The examination will be held in the month of October in each year, and will be open to Students entering then or having entered not earlier than the previous May.

4. This Scholarship is open only to the sons of legally qualified medical practitioners whose age on the day of examination shall not exceed eighteen years; and the sons of former students of the Birmingham Medical School will, *cæteris paribus*, be preferred.

5. All applications for admission to the competition for a Sands Cox Scholarship should be addressed to the Dean of the Medical Faculty on or before the 3rd of October in each year.

6. The Scholarship may be held for three years, subject to good behaviour, and one-third of the value will be paid annually.

Queen's Scholarship.

1. A Queen's Scholarship of the value of £42 will be offered annually.

2. This Scholarship will be awarded by the Council to the student who, on entrance as a first-year's student in the Faculty of Medicine, shall pass the best examination in the following subjects:—Inorganic Chemistry, General Biology, Experimental Physics, and one of the modern languages—French, German, or Italian. In the scientific subjects the examination will be both theoretical and practical.

3. The Examination will be held in the month of October in each year.

4. The Queen's Scholarship is open only to candidates whose age on the day of examination shall not exceed nineteen years.

5. All applications for admission to the competition for a Queen's Scholarship should be addressed to the Dean of the Medical Faculty on or before the 3rd of October in each year.

6. The Scholarship may be held for three years, subject to good behaviour, and one-third of the value will be paid annually.

Russell Memorial Prize.

This prize was founded by students of the Queen's College in memory of the late Dr. James Russell, formerly Honorary Physician to the General Hospital. It is a prize of books awarded annually to the student who, not being of more than six years' standing as a registered medical student of the University, shall pass the best examination in the subject of nervous diseases.

Entrance Scholarship for Dental Students.

1. One will be offered annually of the value of £37 10s.
2. It will be awarded to the Student who, entering for the Dental Degree of the University in October, or having entered not earlier than the previous May, shall pass the best examination in the subjects studied during his apprenticeship.
3. Candidates must be under the age of twenty-one years.
4. Application for admission must be sent to the Dean on or before October 3rd.

Class Prizes.

Medals and Certificates of Honour are awarded annually in each class after examination. Students are not eligible unless they have attended the course of instruction *immediately preceding* the examination.

MEDICAL FEES.

A Composition Fee of Eighty Guineas, payable in one sum (or in two instalments of forty guineas each at the commencement of the first and second years of studentship) admits to the full course of lectures and practical work required by the University, with the exception of those subjects which are studied at the Clinical Hospitals, &c. This course also qualifies for the examinations of the various Conjoint Boards and of other British Universities. This fee does not include, however, courses for Public Health Diplomas, nor those for the Preliminary Scientific Examination of the University of London, nor the additional courses required for the Fellowship of the Royal College of Surgeons, and other such higher diplomas and degrees. It is not a *perpetual* fee, and students allowing their courses to fall into arrear, without having previously obtained the written permission of the Dean to do so, are liable to the forfeiture of the unused portion of their Composition Fee.

Entrance Fees.

Composition Students on entering pay once for all an Entrance Fee of £3 3s., which admits them to the College for five years. At the expiration of this period they may, at the discretion of the Dean, be called upon to pay terminally the entrance fees demanded from occasional students.

Occasional or Class Students are required to pay £1 1s. for each Winter Session and 10s. 6d. for each Summer Session during which they are in attendance at the University.

Incidental Fees.

These fees are not included in the Composition Fee. They are intended to cover the use of apparatus, material, &c., used in the various Practical Classes. The full list of such fees is as follows :—

	£	s.	d.
Dissecting Room (each Winter)	1	11	6
" " (each Summer)		10	6
Practical Physiology	2	2	0

	£	s.	d.
Practical Pathology.....	1	11	6
Practical Pharmacy ..	1	1	0
Operative Surgery	0	10	6

NOTE.—With the exception of the Dissecting Room Fees, all these sums are payable to the Secretary.

Class Fees.

Students wishing to do so can pay for each class as they take it, the following table showing the fees for each course :—

	£	s.	d.
Anatomy and Practical Anatomy (each Winter)	11	11	0
Anatomy and Practical Anatomy (Summer)	3	3	0
Physiology	6	6	0
Physiology, Practical	4	4	0
Medicine	6	6	0
Surgery.....	6	6	0
Chemistry.....	4	4	0
Chemistry, Practical	3	3	0
Elementary Biology.....	5	5	0
Physics.....	5	5	0
Materia Medica and Pharmacy	2	2	0
Pathology.....	4	4	0
Pathology, Practical	4	4	0
Therapeutics.....	4	4	0
Forensic Medicine and Toxicology	4	4	0
Public Health	3	3	0
Operative Surgery	2	2	0
Lunacy and Mental Diseases.....	2	2	0
Ophthalmology	1	1	0
Applied Anatomy	1	1	0
Midwifery and Gynæcology	6	6	0

NOTE.—Composition Students desiring to repeat any course will be required to pay a half fee for such course. In the case of Practical Anatomy this will be £3 3s.

Examination Fees.

The fees payable before a student is admitted to any of the examinations are set down below. A student failing

at any examination will be called upon to pay a half-fee when next presenting himself for the same examination.

	£	s.	d.
Matriculation	2	0	0
First Examination	5	0	0
Second „	5	0	0
Third „	1	0	0
Fourth „	3	0	0
Final „	5	0	0

For the convenience of those desiring to ascertain the total cost of obtaining the degrees of Bachelor of Medicine and Bachelor of Surgery, the following table has been drawn up. It presumes that the student enters by the Composition system and makes no allowance for failures at examinations. No allowance is made either for the cost of books, instruments, or for private tuition, should such be required.

	£	s.	d.	£	s.	d.
MATRICULATION	2	0	0			
				2	0	0
FIRST WINTER.—Entrance Fee ..	3	3	0			
Half Composition	42	0	0			
Dissections	1	11	6			
First Examination	5	0	0			
				51	14	6
FIRST SUMMER.—Practical Physiology ..	2	2	0			
				2	2	0
SECOND WINTER.—Half Composition ...	42	0	0			
„ Hospital Composition	22	10	0			
Dissections	1	11	6			
				66	1	6
SECOND SUMMER.—Dissections	0	10	6			
Second Examination	5	0	0			
				5	10	6
THIRD WINTER.—Half Hospital Composition..	22	10	0			
				22	10	0
THIRD SUMMER.—Practical Pathology ...	1	11	6			
„ Pharmacy	1	1	0			
Third Examination	1	0	0			
				3	12	6
FOURTH SUMMER.—Fourth Examination ...	3	0	0			
				3	0	0
FIFTH YEAR.—Operative Surgery	0	10	6			
Vaccination	1	11	6			
Fever Hospital	3	3	0			
Asylum	3	3	0			
Final Examination	5	0	0			
				13	8	0
				<u>£169</u>	<u>19</u>	<u>0</u>

NOTE.—All fees for University Courses and Incidentals (with the exception of Dissecting-room fees) are payable to the Secretary. Cheques should be drawn in favour of Mr. George H. Morley.

Before attending any class students must obtain a card from the Dean, which they must *at once* present to the Secretary, paying at the same time any fees which may be due. Students are however particularly requested to notice that the card which they obtain from the Dean must be lodged at once with the Secretary whether any fees are payable at the same time or not. Until this is done no credit will be given for attendance upon any course.

Students, whether composition or occasional, who have taken out all the classes for which they have paid, must understand that they have no further *right* to use the University Class-rooms, or Library, or the Common-room. But all Composition Students can obtain permission from the Dean to attend Tutorial Classes, or to use the Museums and Library. The Dean will issue cards to such students each Session, and the cards may be required to be produced at any time. It must be distinctly understood that such cards are held subject to the good conduct of the student, and that the Dean may at any time cancel any student's card.

Occasional students can receive similar cards on paying the terminal Entrance Fee. Students and others desiring information on any subject connected with the Medical Curriculum can obtain the same by applying at the Dean's Office in the University Medical Buildings.

THE GENERAL HOSPITAL, BIRMINGHAM.

Consulting Physicians—

SIR WALTER FOSTER.
SIR WILLOUGHBY WADE.

Physicians—

DR. RICKARDS.
DR. SAUNDEY.
DR. SIMON.
DR. STACEY WILSON.

Surgeons—

MR. T. F. CHAVASSE.
MR. GILBERT BARLING.
MR. W. F. HASLAM.
MR. G. HEATON.

Obstetric Officer—

DR. EDWARD MALINS.

Ophthalmic Surgeon—

MR. D. C. LLOYD-OWEN.

Assistant Physicians—

DR. T. S. SHORT.
DR. J. W. RUSSELL.

Assistant Surgeons—

MR. A. LUCAS.
MR. L. P. GAMGEE.

Assistant Obstetric Officer—

DR. THOMAS WILSON.

Surgical Casualty Officers—

DR. A. DOUGLAS HEATH.
DR. E. P. SATCHELL.

Anæsthetists—

DR. SYDNEY HAYNES.
DR. W. J. MCCARDIE.

Surgical Photographer and Radiographer—

MR. J. HALL-EDWARDS.

Dental Surgeon—

MR. DENCER WHITTLES.

Clinical Instruction (Lectures and Ward Classes) are given daily during the Session by one of the Physicians, Surgeons or Special Officers at 9.45 a.m.

Surgical operations are performed in the theatres each week-day morning.

Tutorial Classes are held during the Session—Medical by Dr. J. W. Russell, Surgical by Mr. A. Lucas, and Gynæcological by Dr. Thomas Wilson.

In addition, students attend the ordinary daily visits of the Staff to the Wards and Out-patient rooms.

Special departments are arranged as follows:—

Obstetric.....Wednesdays and Fridays at 9 a.m.

Ear and Throat.....Mondays at 9 a.m.

SkinThursdays at 9 a.m.

PATHOLOGY.—A class is held by the Pathologist in Morbid Anatomy, on Saturdays, at 11 o'clock, and post-mortem demonstrations take place at 11 a.m. daily.

THE QUEEN'S HOSPITAL, BIRMINGHAM.

Consulting Physicians—

SIR JAMES SAWYER.
DR. SUCKLING.

Physicians—

DR. CARTER.
DR. FOXWELL.
DR. KAUFFMANN.

Consulting Surgeons—

MR. FURNEAUX JORDAN.
MR. J. ST. S. WILDERS.

Surgeons—

MR. BENNETT MAY.
MR. JORDAN LLOYD.
MR. MARSH.

Obstetric Officer—

DR. PURSLOW.

Ophthalmic Surgeon—

MR. PRIESTLEY SMITH.

Physician to Out-Patients and Pathologist—

DR. DOUGLAS STANLEY.

Surgeons to Out-Patients—

MR. J. T. J. MORRISON.

MR. J. H. CLAYTON.

MR. C. LEEDHAM GREEN.

Assistant Ophthalmic Surgeon—

MR. W. ALLPORT.

Days of Attendance for Out-Patients (9 a.m.)*Monday.*—Dr. Kauffmann, Mr. May, and Dr. Purslow.*Tuesday.*—Dr. Stanley, Mr. Lloyd, Mr. Priestley Smith, and Mr. Allport.*Wednesday.*—Dr. Foxwell, Dr. Stanley, Mr. Marsh, and Mr. Leedham Green.*Thursday.*—Dr. Carter, Dr. Kauffmann, Dr. Purslow, and Mr. Morrison.*Friday.*—Dr. Stanley, Mr. Priestley Smith, Mr. Clayton, and Mr. Allport.

Casualty patients are attended on Tuesday and Friday by Mr. Morrison; Wednesday and Saturday by Mr. Clayton; and on Monday and Thursday by Mr. Leedham Green.

Clinical Instruction.

Throughout the academical year Clinical Instruction is given daily in the wards by one of the Physicians, Surgeons, or Special Officers, at 9.30 a.m. "Practice" may be seen daily in the Medical and Surgical Wards and Out-patient rooms. Surgical operations are performed on Wednesday, Thursday, Friday, and Saturday Mornings.

The Obstetric Department is under the charge of Dr. PURSLOW, and the Ophthalmic under Mr. PRIESTLEY SMITH. Demonstrations on recent specimens of Morbid Anatomy are given by Dr. STANLEY at 10.30 on Monday mornings.

Tutorial Classes are held throughout the Session—Medical by Dr. DOUGLAS STANLEY; Surgical by Mr. MORRISON, Mr. CLAYTON, and Mr. LEEDHAM GREEN.

THE GENERAL AND QUEEN'S HOSPITALS, BIRMINGHAM.

The Practices of these Hospitals are amalgamated for the purpose of Clinical Instruction under the direction of the Birmingham Clinical Board by whom all Schedules will be signed and all examinations conducted.

The Hospitals have a total of upwards of 400 beds. 6,000 In-patients and 80,000 Out-patients are treated annually.

Practical instruction is given at the Hospitals in the use of the Microscope, Laryngoscope, Ophthalmoscope, Surgical Appliances, and in Anæsthetics; also in Case-taking, and Bandaging, with Minor Surgery, and the art of Prescribing.

Practical Pharmacy is taught in the Dispensaries of the Hospitals, for which a special fee of one guinea is charged.

Appointments open to Past Students.

At the GENERAL HOSPITAL.

Two Resident Medical Officers—Salary £70 a year.

A degree in Medicine is necessary.

One Resident Surgical Officer—Salary £100 a year.

One Resident Pathologist—Salary £100 a year.

Two non-resident Surgical Casualty Officers—Salary £50 a year.

Two non-resident Anæsthetists—Salary £50 a year.

Four House Surgeons—office tenable for six months, without salary.

Two Assistant House Physicians, tenable for six months, without salary.

One Resident Medical Officer at the Jaffray Hospital—Salary £150 a year.

One Resident Assistant at the Jaffray Hospital (post vacant early in April, July, October and January—tenable for three months).

At the QUEEN'S HOSPITAL.

Two House Physicians (posts vacant in May and November, tenable for twelve months, at a salary of £50).

Three House Surgeons (posts vacant in February, May and November, tenable for twelve months, at a salary of £50).

One Obstetric and Ophthalmic House Surgeon (post vacant in May and November, tenable for six months). Salary £10, with board and lodgings, &c.

One Resident Dresser (post vacant on the first day of January, April, July, and October, tenable for three months). Candidates must previously have attended all their Lectures, &c., and need not be qualified.

Regulations

For the appointments of Resident Clinical Assistant at the Jaffray Hospital and Resident Dresser at the Queen's Hospital.

These posts are awarded by examination.

The Examinations are only open to Students taking out the whole of their clinical course at the School of Medicine of the University of Birmingham.

Students before competing must have attended all their Lectures at the University, and be certified for at least three months' in-patient clerking and three months' in-patient dressing, but they must not have exceeded the limit of the five years' curriculum. The possession of a recently-obtained qualification is not a bar to the holding of either of these appointments.

Clinical Prizes.

The following Prizes will be given annually.

Senior Medical Prize, for Students <i>during</i> their			
"final" year, to the value of	...	...	£5 5
Senior Surgical Prize, ditto	...	...	£5 5

Junior Medical Prize, for Students <i>before</i> the commencement of their "final" year, to the value of 						£3	3
Junior Surgical Prize, ditto 						£3	3
Midwifery Prize, for Students <i>during</i> their "final" year, to the value of 						£4	4

These Prizes are awarded at the end of the Summer Session, and are open to Students registered by the Clinical Board, who have attended not less than one Six Months' Course of Medical or Surgical Lectures at the University.

For the Senior Medical Prize, every candidate must produce a certificate of having held the office of Clinical Clerk in either the General or the Queen's Hospital for a period of *six* months; and must deliver to the examiners notes of *four* medical cases which have been personally observed and reported by him during his clerkship, the same to be certified to by the initials of the Physician under whose care the cases were placed. The examination will include a paper of *four* questions on the Principles and Practice of Medicine; a written diagnosis of *two* living cases, with grounds for the same; together with such additional evidence of a practical knowledge of Medicine as the examiners for the time being shall require.

For the Junior Medical Prize, every candidate must produce a certificate of having held the office of Clinical Clerk in either the General or the Queen's Hospital for a period of *three* months. The examination will include a paper of *four* questions on the Principles of Medicine; together with such evidence of a practical knowledge of the methods of physical examination, and of the names, uses, and methods of employment of common drugs, remedies, instruments, and apparatus, as the examiners for the time being shall require.

For the Senior Surgical Prize, every candidate must produce a certificate of having held the office of Surgical Dresser in either the General or Queen's Hospital for a period of *six* months; and must deliver to the examiners notes of *four* surgical cases which have been personally observed and reported by him during his dressership, the same to be certified to by the initials of the Surgeon under whose care the cases were placed. The examination will include a paper of *four* questions on the Principles and Practice of Surgery; the written diagnosis of *two* living cases, with grounds for the same; together with such additional evidence of a practical knowledge of Surgery as the examiners for the time being shall require.

For the Junior Surgical Prize, every candidate must produce a certificate of having held the office of Surgical Dresser in the General or Queen's Hospital for a period of *three* months. The examination will include a paper of *four* questions on the Principles of Surgery; together with such evidence of the names, uses, and methods of employment of common surgical instruments, bandages, and apparatus, as the examiners for the time being shall require.

For the Midwifery Prize every candidate must produce a certificate of having personally attended at least *ten* cases of Midwifery, and also a certificate of having attended the Out-patient Gynæcological Department at either the General or the Queen's Hospital for *three* months. The examination will include a paper of *two* questions on Diseases peculiar to Women, and *two* questions on the Principles and Practice of Midwifery; together with a practical examination of such a kind as the examiner for the time being shall determine.

Notice of intention to compete for the above Prizes must be communicated to one of the Honorary Secretaries of the Clinical Board at least *seven days* before the day of examination.

In no case will any Prize be awarded unless at least *seventy per cent.* of the total possible number of marks be obtained.

A professional qualification obtained during the Summer Session *immediately* preceding these examinations does not—*per se*—disqualify a candidate.

Scale of Hospital Fees.

Fee for attendance for the full period required by the various examining bodies on the Medical and Surgical Practice and on the Clinical Lectures at both Hospitals £42

N.B.—This payment can be made in two instalments of £22 10s. each—the first on entrance at Hospital and the second at the commencement of the following year.

FEES FOR BOTH MEDICAL AND SURGICAL PRACTICE.

One Year's Attendance	...	...	...	£22 10s.
Six Months' „	...	...	...	£14.
Three Months' „	..	...	...	£10.

FEES FOR EITHER MEDICAL OR SURGICAL PRACTICE.

One Year's Attendance	...	...	...	£11 11s.
Six Months' „	...	...	...	£7.
Three Months' „	...	...	...	£5.
Pharmacy Instruction ...	...	...	...	£1 1s.

Regulations.

1. The arrangements for Clinical Teaching are, as far as possible, conducted at both Hospitals on the same plan.

2. The recognised hours for Hospital attendance of Students are from 9 a.m. to 1 p.m. daily.

3. The Teaching provided consists of :

- 1, Clinical Lectures in the theatre or lecture rooms ;
- 2, Clinical Instruction in the Wards ; 3, Tutorial Classes ; 4, Pathological Demonstrations.

The first two forms are given by the Members of the Honorary Staffs, in such order as they may arrange among themselves; the third, or Tutorial Classes are conducted by Special Tutors selected for that duty.

4. Clinical Instruction is given in the Medical or Surgical Wards daily, but not during the hour set apart for the Clinical Lectures.

5. Registers of attendance on Clinical Lectures and Tutorial and Ward Classes are kept. Cards are supplied to Final year Students, on which each individual attendance will be certified by the teacher.

6. During the First year of the Medical Curriculum, attendance at Hospital is not recognised.

During the Second year of the Medical Curriculum (First year at Hospital) Students must attend a Surgical Tutorial Class once a week. [This course is not compulsory on Candidates for the Diplomas of the English and Scotch Conjoint Boards, and will, under no circumstances, be reckoned as one of the years required by the Schedules of the above-mentioned bodies; all Students are, however, strongly advised to attend this course during this year.]

During the Third year of the Medical Curriculum (Second year at Hospital) Students must attend :

a, Clinical Lectures on Surgery; *b*, Medical and Surgical Ward Classes; *c*, Surgical Dressing (including three months Out-Patient and six months In-Patient Dressing); *d*, Medical Tutorial Classes. N.B.—These must be attended for three months before In-Patient Dressing is commenced.

(No Student will obtain credit for this year of Hospital work unless he has previously passed his Anatomical and Physiological Examinations.)

During the Fourth year of the Medical Curriculum (Third year at Hospital) Students should attend :

a, Clinical Lectures on Medicine; *b*, Medical and Surgical Ward Classes; *c*, Clinical Gynæcology; *d*, Post-mortem Clerking. The Student must also attend Post-mortem Examinations and Demonstrations during the year. *e*, Medical Clinical Clerking for six months.

During the Fifth year of the Medical Curriculum (Fourth year at Hospital) Students should attend :

* *a*, Clinical Instruction in Medicine and Surgery (during this year Students are at liberty to attend these subjects at either Hospital, *vide* Reg. 3, p. 64); *b*, Clinical Ophthalmology (three months); *c*, Vaccination; *d*, Fever Hospital (three months); * *e*, Lunatic Asylum (three months); *f*, Clinical Midwifery (twenty cases); *g*, Gynæcological Clerking (three months); *h*, Instruction in Anæsthetics, consisting of attendance at three Lectures and the personal administration of Anæsthetics in ten cases.

7. Students holding the appointments of Medical Clinical Clerk, or Surgical Dresser, are exempt from Ward Classes in Medicine and Surgery on the days on which their services are required by the Officer under whom they are working.

8. The following Syllabus of Instruction is followed in the Tutorial Classes for Elementary Medicine and Surgery :

MEDICINE : Physical Examination. *Winter*—1, Temperature; 2, Integumentary System; 3, Circulatory System; 4, Respiratory System; 5, Alimentary System. *Summer*—6, Nervous System; 7, Urinary System; 8, The use of the Ophthalmoscope, Laryngoscope, and Aural Speculum.

SURGERY : *Winter*—1, Bandaging; 2, Strapping; 3, Application of Splints; 4, Minor Injuries; 5, Wound Dressing and Wound Treatment; 6, Hæmorrhage, Hæmostasis, Tourniquets; 7, Artificial Respiration. *Summer*—8, Minor Operations : Catheterisation, Plugging the Nares, Hypodermic Injection, Removal of Foreign Bodies from the Eye, Ear, and Œsophagus; 9, Shock, Fainting, Stings, Leeching, Counter-irritation; 10, Surface Landmarks and Guides.

* The subjects *a* and *c* must be attended during the final year.

General Regulations.

1. Every Student is required to register his name for Hospital Practice within fifteen days of the commencement of the Winter Session. (Due notice of the time and place for such registration will be posted in the Hall of the University and in the General and Queen's Hospitals.)

2. Clinical fees must be paid to Mr. W. F. Haslam, 54, Newhall Street, previously to or at the time of registration, who will give all information relating to Hospital Practice, and sign schedules, which must be left *at least three days* before they are required.

3. Students must attend twelve months alternately at the General and Queen's Hospitals, as directed at the time of registration, but during their "final" year they may attend at either or both Hospitals.

4. Students who enter for a term of six months or less may choose which Hospital they will attend.

5. All Students registering for Hospital Practice are required to attend at least *two-thirds* of the Classes for which they register.

6. Students referred at their Final Examinations must register with the Hon. Secretary of the Clinical Board for any further attendance they may require.

7. Not more than two Dressers and two Clerks are assigned at the same time to each Surgeon and Physician respectively.

Midwifery Regulations.

1. Before attending practical midwifery, students shall have passed their Anatomical and Physiological Examinations.

2. They shall conform to the Queen's Hospital By-laws which relate to the work of its Midwifery Department.

3. They shall apply in the first place to the Secretary of the Clinical Board, who will furnish them with a "Clinical Midwifery Card," which must be signed by the

Obstetric Surgeon on the completion of the duties, and returned.

4. They shall not be engaged in Surgical Dressing, Post-mortem, or Dissecting Room work during the time of their attendance.

Pharmacy Regulations.

1. Before attending Pharmacy at the General and Queen's Hospitals, Students must have entered for Hospital practice, or must have entered as students in the Medical Faculty of the University.

2. They shall apply in the first place to the Secretaries of the Clinical Board, who shall furnish them with a "Practical Pharmacy Card," which must be signed by the Hospital Dispenser on the completion of the duties, and returned.

By order of the Birmingham Clinical Board,

T. F. CHAVASSE, F.R.C.S., *President*.

W. F. HASLAM, F.R.C.S. } *Hon. Secs.*
A. FOXWELL, M.D., Cantab. }

ASSOCIATED HOSPITALS.

The undermentioned Institutions are open to the Students of the University free (with the exception of the City Fever Hospital and the City Asylum), under the following regulations, which have been approved by the Council.

1. That it be recognised that Students attending such Hospitals do so upon the understanding that, except in the case of the City Fever Hospital and the City Asylum (at which, by the regulations of various Licensing Bodies, three months' attendance is required), such attendance is in no way to supersede or be considered as equivalent to attendance at the General and Queen's Hospitals.

2. That Students who have diligently attended Courses at such Hospitals be, on the recommendation of the staff of any such Hospital, awarded special certificates, such

certificates to be signed by the Chairman and Secretary (or other official) of the Medical Board of such Hospital, and countersigned by the Dean on the part of the University.

The City Fever Hospital, Lodge Road.

Medical Superintendent :

EUGENE CHATELIER, M.B., C.M.

This Institution is recognised by all the Licensing Bodies as a Fever Hospital at which attendances may be made.

The following Regulations have to be observed :—

1. Every student while within the gates of the Hospital shall be subject to the control of the Medical Superintendent, who has authority to suspend him from further attendance in case of breach of discipline.

2. He shall strictly adhere to the regulations made from time to time with regard to disinfection.

3. He shall not visit any ward except in the company of the Medical Superintendent or his deputy.

4. A register shall be kept at the Hospital, in which shall be entered the name of every student and the number of his attendances.

5. The minimum duration of any course of instruction shall be three months, the hours of attendance to be fixed by the Medical Superintendent.

6. A certificate, to be signed by the Medical Superintendent, shall be granted to each student when he shall have satisfactorily completed his course of study.

7. The fee for each course is *Two Guineas* for the first three months, and *One Guinea* for each additional month or part of a month, payable in advance to the Medical Superintendent.

8. These rules shall apply equally to legally qualified medical men, who may desire to attend the Hospital for the purpose of clinical instruction.

The City Asylum, Winson Green.

Medical Superintendent :

E. B. WHITCOMBE, M.R.C.S.

This Institution is recognised by all the Licensing Bodies as a Hospital at which attendance may be made in the subject of Mental Disease. By the regulations of the University of London and other Bodies, such attendance may count towards the requisite period of Clinical study. Courses of instruction are given in the months of January, February and March, and May, June and July.

A Special Fee of £3 3s. has to be paid to Mr. Whitcombe, to whom application must be made for Rules, &c., as to attendance.

Birmingham and Midland Eye Hospital.

Honorary Consulting Physician :

R. SAUNDBY, M.D., F.R.C.P., LL.D.

Honorary Consulting Surgeons :

E. CHESHIRE, F.R.C.S.

D. C. LLOYD-OWEN, F.R.C.S.I.

Surgeons :

H. EALES, M.R.C.S.

E. W. WOOD-WHITE, B.A., M.D., B.Ch.

J. JAMESON EVANS, M.B., M.C., F.R.C.S.

Dental Surgeon :

W. T. MADIN, L.D.S.

Anæsthetist :

S. W. HAYNES, M.D., Edin.

This Hospital possesses 105 beds, and there is an average daily attendance of out-patients of 189.

This Institution is recognised by the Royal College of Surgeons, England, and Royal College of Physicians, London, as an Ophthalmic Hospital at which clinical instruction in Ophthalmology may be received. Students attending for a period of three months will be granted Certificates which will qualify for the Conjoint Board Examination.

Days of Attendance :

Mr. EALES - - - Tuesday and Friday.
 Mr. WOOD-WHITE - Monday and Thursday.
 Mr. JAMESON EVANS - Wednesday and Saturday.
 Out-patients are seen daily at 9 a.m.
 Operations daily at 11 a.m.

The Royal Orthopædic and Spinal Hospital.

Honorary Consulting Physician :

C. W. SUCKLING, M.D., M.R.C.P.

Honorary Consulting Surgeons :

W. C. FREER, F.R.C.S.

CHARLES WARDEN, M.D., F.R.C.S., Edin.

Surgeons :

WILLIAM THOMAS, M.B., F.R.C.S. (*Secretary to the*

Medical Committee).

AUGUSTUS CLAY, M.R.C.S.

WM. EDWARD BENNETT, F.R.C.S.

Assistant Surgeon :

E. LUKE FREER, M.R.C.S.

Anæsthetist :

WALTER R. JORDAN, M.D., Lond.

Accommodation for 22 In-patients.

Days of Attendance.

Mr. WM. THOMAS - Monday and Friday, at 2.30 p.m.

Mr. AUGUSTUS CLAY Thursday, at 3.

Mr. W. E. BENNETT Wednesday and Saturday, at
10 a.m.

Mr. E. LUKE FREER Tuesday, at 3.

Operations, Tuesday, at 12.

Clinical Assistants are appointed for three months from the students who have passed the Second M.B. or other similar examination. A Certificate will be granted to each student who satisfactorily performs the duties of the office.

Further particulars may be obtained from the Secretary to the Medical Committee, 9, Great Charles Street, from 3 to 5 p.m.

**Birmingham and Midland Ear and Throat
Hospital.**

Honorary Consulting Physician :

Sir WALTER FOSTER, Kt., M.D., F.R.C.P., D.C.L., M.P.

Honorary Consulting Surgeons :

JOHN ST. S. WILDERS, M.R.C.S. (Eng.)

CHARLES WARDEN, M.D., F.R.C.S. (Edin.)

Surgeons :

WRIGHT WILSON, F.R.C.S. (Edin.)

C. J. LEWIS, M.D. (Brux.)

F. MARSH, F.R.C.S. (Eng.)

Assistant Surgeon :

F. W. FOXCROFT, M.D., C.M.

Hon. Secretary Medical Board :

F. W. FOXCROFT, 33, Paradise Street.

Days of Attendance:

Mr. WRIGHT WILSON	- -	Wednesday, 9.30 to 11 a.m.
Dr. LEWIS	- - - - -	Thursday, 9.30 to 11 a.m.
Mr. MARSH	- - - - -	Tuesday, 9.30 to 11 a.m.
Dr. FOXCROFT	- - - - -	Monday and Friday, 9.30 to 11 a.m.

Patients are admitted at the side entrance in Barwick Street, daily from 9.30 a.m. to 11 a.m.

The Hospital has 31 Beds in occupation.

A Resident House Surgeon is appointed by the Medical Sub-Committee every six months, at a salary at the rate of £40 per annum for that time, and at the rate of £60 per annum for the next six months, if he be re-elected. Rooms, board and washing are provided in the Hospital.

Candidates for the post must possess a registered qualification in Medicine and Surgery, and will be required to devote their whole time to the service of the Hospital. There is ample time for reading. Further particulars may be obtained from the Secretary of the Hospital, 109, Edmund Street.

Students are admitted to the practice of the Hospital when they have passed their intermediate examinations in Anatomy and Physiology, and may be appointed as Clinical Assistants for terms of not less than three months.

NOTE.—Students desirous of attending at any of these Institutions should communicate with the Hon. Sec. to the Medical Board of such Hospital, who will afford him all the information which he may require.

LIBRARY OF THE BIRMINGHAM MEDICAL INSTITUTE.

By the courtesy of the Committee of the Medical Institute, Students of the Faculty of Medicine are admitted to read in the Library of the Institute under the following conditions.

1. Admission is confined to—

- (a) 3rd, 4th, and 5th years' Students.
- (b) 1st and 2nd years' Students reading for higher examinations.
- (c) Sons of Members of the Institute, of any year, whether reading for higher examinations or not.

Classes *a* and *b* must apply to the Dean of the Medical Faculty for a card of recommendation, which they must send, together with their letter of application, to the Hon. Secs. of the Institute. Class *c* must apply direct to the Hon. Secs.

2. Students are only admitted to the Library Hall, and *not* to the Reading Room or the Smoking Room.

3. It is understood that the Hall is not to be used for the reading of text-books.

4. Each Student will receive a printed ticket of admission from the Librarian. He must show this whenever required, and must get it renewed every year.

VACCINATION.

Dr. E. ROBINSON, 213, Bristol Road,
Public Vaccinator.

Birmingham Teaching Station at Priory Rooms
(Opposite Fire Station).

*Regulations according to the Instructions of the Local
Government Board for 1900—1901.*

THREE COURSES OF INSTRUCTION WILL BE GIVEN:

- 1st.—Commencing the second Monday in October.
- 2nd.—Commencing the second Monday in January.
- 3rd.—Commencing the second Monday in May.

An attendance book is provided, wherein every attendance is registered by the signature of the pupil, with other details.

The course of instruction consists of at least six demonstrations and addresses, and it is requisite that the pupil attend during six consecutive weeks.

The Class commences punctually at 1.30 p.m. each day, at which time the Register will be open.

FEE: £1 11s. 6d., payable to Dr. ROBINSON.

REGULATIONS FOR DEGREES IN DENTISTRY.

1. The Degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.).

2. All candidates for these Degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees.

3. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a License in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the Degree until a period of twelve months has elapsed from the passing of his examination for the License in Dental Surgery. Of this period at least six months must be spent in the Dental Department of a General Hospital approved by the University.

4. A. In addition to the License in Dental Surgery the candidate must produce evidence that he has attended the Courses required by Medical Students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees :—

(a) Chemistry, and Practical Chemistry.

(b) Physics, and Practical Physics.

(c) Biology.

(d) Anatomy, and Practical Anatomy.

(e) Physiology, and Practical Physiology.

B. That he has attended the following Courses :—

(f) One Course of Lectures on Medicine.

(g) One Course of Lectures on Surgery.

(h) Special Courses of Lectures on the Surgery and Medicine of the Mouth.

(i) Pathology and Bacteriology.

And has passed the examinations for candidates for Dental Degrees held in each of these subjects.

C. That he has attended Courses in :—

(k) Dental Histology and Patho-Histology.

(l) Comparative Dental Anatomy.

(m) Dental Surgery and Prosthetic Dentistry.

D. That he has received instruction in the Clinical Examination of living cases at the Dental Department of a General Hospital for a period of not less than six months.

5. The Final Examination will deal with the subjects in Classes *C.* and *D.*

6. On the expiration of twelve months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery.

7. For this Degree candidates will be required to submit a Thesis containing original work and investigations in some subject connected with Dentistry, which Thesis shall be submitted to examiners to be nominated by the Board of Dental Studies. The Degree will be awarded or withheld according to the report of these examiners.

The teaching of Dentistry is undertaken by the University, acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board.

The Dental Museum contains a large collection of Specimens, arranged particularly with a view to the teaching of Dental Students.

An Entrance Scholarship, value £37 10s., is awarded annually at the commencement of the Winter Session.

Medals and Honour Certificates are awarded annually in the various Classes.

The Dental Hospital is situated near the University, and is open daily (Sundays excepted). A large number of patients are treated there annually.

The Hospital affords every opportunity to the Students for acquiring the highest practical knowledge of the Dental art. A large conservancy room has recently been erected with accommodation for twenty chairs. A

Mechanical Work-room has been opened, fitted with a view to the practical teaching of crown and bridge work and the manufacture of porcelain continuous gum work, with the latest developments of modern Dentistry. Demonstrations are given daily by the officials in Fillings of all kinds, including the use of soft and cohesive gold, the application of the rubber dam, and the various forms of plastic fillings.

The General and Queen's Hospitals offer every advantage for the study of general Surgery and Medicine, the arrangements for which are carried out under the direction of the Birmingham Clinical Board (see page 57).

LECTURES FOR THE DENTAL CURRICULUM.

SPECIAL SUBJECTS.

Dental Surgery and Pathology.

Lecturer, F. E. HUXLEY, M.R.C.S., L.D.S., Edin.

Pathology and treatment of inflammation, with special reference to the mouth.

Necrosis and fractures of the jaws.

Irregularities of the teeth.

Odontomes and tumours of parts adjacent to the teeth.

Caries and other diseases of the teeth.

The micro-organisms of the mouth.

Neuralgias.

Cleft-palate and obturators.

Practical Dental Surgery.

Lecturer, W. T. MADIN, L.D.S., Eng.

This course deals with the composition of filling materials, the Hygiene of the mouth, and a full discussion and demonstration of the practical methods of treating all

the lesions and diseases met with in the practice of Operative Dental Surgery.

Dental Anatomy and Physiology.

HUMAN AND COMPARATIVE.

Lecturer, JOHN HUMPHREYS, L.D.S.I., F.L.S.

The method and use of the study of odontology.

The general and minute structure and composition of the teeth, and their modifications in man and animals.

The arrangement and uses of the teeth of man and typical animals.

Structure of the gum, periosteum, and dental pulp.

Development of the teeth.

Development of the jaws, alveoli, &c., and their anatomical relations.

Mastication and the oral secretions.

This course is fully illustrated by the large collection of skulls, teeth, &c., contained in the Museum, as also by microscopic preparations and drawings, and a series of lantern slides.

Dental Histology.

Lecturer, DENCER WHITTLES, L.D.S., Eng.

The course includes the various methods used in preparing Microscopical Sections of hard and soft tissues in and in relation to the oral cavity.

HISTOLOGICAL :—

The Dental Tissues, including the various forms of Enamel, Dentine, Cementum, Osteo-Dentine, Vaso-Dentine, Plici-Dentine, &c.

The Tooth Papilla.

The Muco-periosteum and Periodontal Membrane.

Development of the Teeth in Fish, Reptiles, and Mammals.

Calcification of Dental Tissues :

The Enamel Organ, the Dentine Organ, the
Cementum Organ, etc., etc.

PATHOLOGICAL :—

Caries of Enamel, Dentine and Cementum.

Cementosis.

The Tooth Papilla :

Inflammation.

Various forms of Degeneration.

Tumours growing in connection with the Oral Cavity,
&c., &c.

Dental Mechanics.

Lecturer, A. E. DONAGAN, L.D.S., Edin., B.A., Cantab.

Introduction and general principles of Prosthetic
Dentistry.

Treatment of the mouth preparatory to the insertion of
artificial dentures.

Materials used and methods employed in taking
impressions of the mouth.

Casting in plaster and metal.

Methods of obtaining the correct articulation of the
teeth.

Vulcanite work.

(a) The preparation of dental rubber.

(b) Artistic arrangement of teeth.

(c) Production of plates of equal thickness.

(d) Flasking, packing, and vulcanizing.

(e) Clasps and strengtheners.

(f) Methods of weighting lower dentures.

Plate and tube work.

Combination work.

Continuous gum work and section blocks.

Making and mounting springs and swivels

Mechanical treatment of Dental Irregularities and Oral Deformities.

Varieties of crown and bridge work.

Mechanical treatment of Fractured Maxilla.

The course will be fully illustrated by the exhibition of models, appliances, and diagrams.

Dental Metallurgy.

Professor, PERCY F. FRANKLAND, Ph.D., B.Sc., F.R.S.

Lecturer, GODFREY MELLAND, B.Sc., A.R.S.M., F.I.C.

A Special Course of about *twenty* lectures is given on the above subject.

It treats of the physical and chemical properties of the metals as a class, and of the preparation and properties of the principal metals used in Dentistry.

A Special Class in *Practical Dental Metallurgy* is held during the Summer Session to study the practical applications of Metallurgy to Dentistry. The class meets in the Metallurgical Laboratory.

General Constitutional and Local Diseases of the Mouth in their relationship to Dentistry.

Lecturer, T. STACEY WILSON, M.D., M.R.C.P.

I.—Medical Diseases of the Mouth which interfere with the development or maintenance of the teeth.

Stomatitis (Simple, Ulcerative, Mercurial, Symptomatic, &c.)

Diseases causing Mouth Breathing.

II.—Morbid constitutional states which interfere directly or indirectly with the development or maintenance of the teeth.

Rickets—Dyspepsia (Gastro intestinal, Catarrh, &c.)—

Fevers—Exhausting Diseases in General—Scurvy—

Gout—Osteomalacia—Phosphorus Poisoning, &c.

Mode of action of these various diseases and their results.

III.—Morbid constitutional states which render ordinary dental operations unusually dangerous.

Hæmophilia—Cardiac Disease, &c.

IV.—Morbid constitutional states or local diseases of the mouth which result from a morbid state of the teeth.

Stomatitis, &c.—Dyspepsia, Pyæmia and Sæpraemia—

Disturbances of the Nervous System, &c.

Surgical Diseases of the Mouth in their Relationship to Dentistry.

Lecturer, FRANK MARSH, F.R.C.S.

Inflammation—Abscess—Ulceration—Caries—Necrosis.—Alveolar and Antral Abscess.

Specific Diseases—Syphilis—Tubercle—Erysipelas—Cancrum Oris.

Closure of Jaws.—Hæmorrhage.—Diseases of Salivary Glands.

Congenital Defects—Fissures and Hypertrophies—Methods of closure or removal.

Tumours.—Cysts—Classification and clinical features—Symptoms—Diagnosis and treatment of those growing in buccal cavity, or from the maxillary bones.

Dental Bacteriology.

Professor, R. F. C. LEITH, M.B., B.Sc., F.R.C.P.E.

Assistant Lecturers, C. LEEDHAM-GREEN, M.D., F.R.C.S.,
and W. D'ESTE EMERY, M.D., B.Sc.

This course is given in the Bacteriological Laboratory. It begins in January, and consists of a short course of practical work, including demonstrations upon the classification of the micro-organisms of the mouth, their relation to disease; the Fungi, the Saprophytic

Bacteria, the Saliva Bacteria, the Ferment producers, the Pyogenic Bacteria in Suppuration of the Gums, &c.; the Bacteria of Dental Caries, the Bacteria of the more general mouth and pharyngeal diseases, *e.g.*, Diphtheria, Actinomycosis, Tubercle, &c.

GENERAL SUBJECTS.

Anatomy, Practical Anatomy, Physiology, Practical Physiology, Chemistry, Practical Chemistry, Physics, Elementary Biology, Pathology, Bacteriology, Medicine, and Surgery. (See Syllabus of Medical Faculty).

STUDENTS DESIRING INFORMATION AS TO THEIR WORK ARE REQUESTED TO CONFER WITH THE HON. SEC. OF THE DENTAL SCHOOL, J. HUMPHREYS, L.D.S., F.L.S., 149, EDMUND STREET.

OPEN ENTRANCE SCHOLARSHIP FOR DENTAL STUDENTS.

- 1.—One will be offered annually of the value of £37 10s.
 - 2.—It will be awarded to the Student who, entering in October as a candidate for the Dental Degree, or having entered not earlier than the previous May, shall pass the best examination in the subjects studied during his apprenticeship.
 - 3.—Candidates must be under the age of twenty-one years.
 - 4.—Application for admission must be sent to the Dean of the Medical Faculty on or before October 3rd.
-

The following text books must be purchased by Dental Students :—

- Dental Anatomy (Tomes).
 - Diseases and Injuries of the Teeth (Smale and Colyer).
 - Theory and Practice of Surgery (Walsham).
 - Dental Microscopy (Hopewell Smith).
 - Injuries and Surgical Diseases of the Face, Mouth, and Jaws (Marshall).
 - Mechanical Dentistry (Richardson).
 - Dental Metallurgy (Smith).
-

DENTAL SCHOOL.

1900-1901.

FIRST YEAR TIME TABLE.						
SUBJECTS.	Mon.	Tu.	Wed.	Th.	Fri.	Sat.
WINTER SESSION.						
Chemistry Lectures	9.30	9.30	9.30	9.30	9.30	..
*Elementary Biology :—						
*Lectures .. .. .	..	4.0	4.0	4.0	..	..
*Practical .. .. .	..	2.0	..	2.0	..	..
Anatomy Lectures.....	10.30	10.30	10.30	10.30	..	..
Practical Anatomy.....	..	..	(Daily.)		..	..
*Physics :—						
*Lectures	11.30	..	11.30	..	11.30	..
*Practical .. .. .	..	..	..	..	2.0	..
Dental Metallurgy Lectures	4.0	..	..	..	..	..
Practical Dental Mechanics	(At the Hospital.)					
SUMMER SESSION.						
Chemistry :—						
*Lectures	9.30	..	9.30	..	9.30	..
Practical	2.0	2.0	2.0	2.0	..	..
Physics :—						
Lectures .. .. .	..	9.30	..	9.30	..	..
*Practical .. .. .	..	..	..	..	2.30	..
Practical Physiology	10.30	10.30	10.30	10.30	10.30	..
Dental Mechanics Lectures .....	..	4.0	..	..	..	..
Practical Dental Metallurgy .....	..	..	..	..	..	10.0
Practical Dental Mechanics	(At the Hospital.)					

* Not attended by Students reading for L.D.S. ONLY.

Students are requested to take notice that they are expected to attend at least two-thirds of the lectures of each course, and also the class examinations, and that the Schedules of those who do not observe these regulations will not be signed.

SECOND YEAR TIME TABLE.

SUBJECTS.	Mon.	Tu.	Wed.	Th.	Fri.	Sat.
WINTER SESSION.						
Dental Hospital Practice	9.0	9.0	9.0	9.0	9.0	9.0
Anatomy:—						
Lectures	12.0	..	12.0	12.0	12.0	..
Practical .....	..	..	<i>(Daily.)</i>		..	..
Physiology:—						
Lectures	10.30	10.30	10.30	10.30	10.30	..
Practical .....	..	3.0	..	..	..	..
Dental Anatomy Lectures .....	..	..	..	..	4.0	..
Dental Surgery Lectures	4.0	..	..	..	..	..
Practical Dental Surgery Lectures .....	..	..	4.0	..	..	..
Dental Histology Lectures .....	..	..	..	4.0	..	..
SUMMER SESSION.						
Dental Hospital Practice	9.0	9.0	9.0	9.0	9.0	9.0
*Anatomy:—						
*Lectures	12.0	..	12.0	..	12.0	..
*Practical .....	..	..	<i>(Daily.)</i>		..	..
Practical Dental Histology .....	..	2.0	..	..	4.0	..
Diseases of the Mouth (Surgical)..	..	..	4.0	..	..	..
" " " (Medical)..			<i>(By arrangement.)</i>			

THIRD YEAR TIME TABLE.

SUBJECTS.	Mon.	Tu.	Wed.	Th.	Fri.	Sat.
WINTER SESSION.						
Dental Hospital Practice.....	9.0	9.0	9.0	9.0	9.0	9.0
General or Queen's Hospital Practice (<i>Students must attend three days a week.</i>)	9.0	9.0	9.0	9.0	9.0	9.0
Medicine Lectures.....	..	3.0	3.0	..	3.0	..
Surgery Lectures .....	..	4.0	4.0	..	4.0	..
*Pathology and Bacteriology	1.0	1.0	1.0	1.0	1.0	..
Dental Bacteriology	<i>(After Christmas, as arranged.)</i>					
SUMMER SESSION.						
Dental Hospital Practice.....	9.0	9.0	9.0	9.0	9.0	9.0
*Practical Pathology	2.0	..	2.0	..	2.0	..

* Not attended by Students reading for L.D.S. ONLY.

REGULATIONS RELATING TO THE DIPLOMA OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND IN DENTAL SURGERY.

Candidates who register as Dental Students after the 1st January, 1897, are required to pass three Examinations—the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination—and to produce the following Certificates before admission to the several Examinations:—

PRELIMINARY SCIENCE EXAMINATION.

1. Of having received instruction, at an Institution recognised for the purpose, in Chemistry, Physics, and Practical Chemistry.

This instruction may be taken prior to the Date of Registration as a Dental Student.

FIRST PROFESSIONAL EXAMINATION.

2. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner, or under the direction of the Superintendent of the Mechanical Department of a recognized Dental Hospital, where the arrangements for teaching Mechanical Dentistry are satisfactory to the Board of Examiners in Dental Surgery. In the case of qualified Surgeons, evidence of a period of not less than two instead of three years of such instruction will be sufficient.

This instruction may be taken prior to the Date of Registration as a Dental Student.

3. Of registration as a Dental Student by the General Medical Council, 299, Oxford Street, London, W.
4. Of having attended at a recognized Medical School:—
 - (a) A course of Lectures on Dental Metallurgy.
 - (b) A course of Practical Dental Metallurgy.

- (c) A course of Lectures on Dental Mechanics.
- (d) A course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

SECOND PROFESSIONAL EXAMINATION.

5. Of having been engaged during *four years* in the acquirement of professional knowledge, subsequently to the date of registration as a Dental Student.
6. Of having attended at a recognized Medical School :—
 - (a) A course of Dental Anatomy and Physiology.
 - (b) A separate course of Dental Histology, including the preparation of Microscopical Sections.
 - (c) A course of Dental Surgery.
 - (d) A separate course of Practical Dental Surgery.
 - (e) A course of not less than 5 Lectures on the Surgery of the Mouth.*

* These Lectures may be given either at a recognized Dental Hospital and School, in which case the Lecturer must be a qualified Surgeon practising Surgery, or they may be given at a recognized Medical School, and may form part of the course required by Clause 8 (d).

7. Of having attended at a recognized Dental Hospital or in the Dental Department of a recognized general Hospital, the Practice of Dental Surgery during two years.
8. Of having attended at a recognized Medical School :—
 - (a) A course of Lectures on Anatomy.
 - (b) A course of Lectures on Physiology.
 - (c) A separate Practical Course of Physiology.
 - (d) A course of Lectures on Surgery.
 - (e) A course of Lectures on Medicine.

Students are required to attend the Examinations which are held in the several Classes.

9. Of having performed Dissections at a recognized Medical School during not less than 12 months.
10. Of having attended, at a recognized Hospital or Hospitals, the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.

11. Of being 21 years of age.

The Certificates of professional study will be required to show that Students have attended the courses of lectures, etc., to the satisfaction of their Teachers.

The Examinations held in the various classes are compulsory for all Students.

NOTE.—Professional study prior to the date of registration as a Dental Student is not recognized except in the case of Chemistry, Physics, and Practical Chemistry, and of instruction in the details of Mechanical Dentistry, and will not be counted under any circumstances in lieu of part of the four years' study subsequent to the date of registration as a Dental Student.

BIRMINGHAM DENTAL HOSPITAL,

71, NEWHALL STREET.

OPEN DAILY AT 9 A.M.

Admission.—Students are admitted to this Hospital on the understanding that it is their intention to obtain the Dental Diploma of one of the Royal Colleges of Surgeons of the United Kingdom *cum curriculo*.

Attendance.—The Hospital is open daily at nine o'clock (Sundays excepted), and Students must attend at that hour unless their attendance is required at one of the General Hospitals.

The Hospital must be attended for two years consecutively, irrespective of College vacations.

Dresserships.—Regular days will be appointed by the House Surgeon for each Student to attend in the Extracting, Anæsthetic, and Conservancy Rooms. Cases for filling, and operating chairs will be allotted to Students by the House Surgeon or the Dental Officers in attendance.

Requirements of Curriculum.—During the two years' attendance Students will be required :—

- (a) To attend as dressers in the Extracting and Anæsthetic Rooms.
- (b) To perform filling and other conservative operations.
- (c) To treat at least four regulation cases mechanically.
- (d) To make and insert at least six dentures and at least eight crowns (six being collar).

Mechanical Department.—This Department is open every afternoon (Saturdays and Sundays excepted) for making, under the supervision of a skilled teacher, dentures and regulating appliances. Students will be appointed to attend in rotation by the Senior Officer of the Department.

Registration.—Dental Students are required to register their names for Dental Hospital Practice on the first Tuesday in May and October.

Fees.—For Dental Hospital Practice and Demonstrations, twenty guineas, payable to the Dean of the Hospital, F. W. Richards, Esq., 54, Newhall Street.

DENTAL FEES.

The Dental student can enter either as a Composition or Occasional student, *i.e.*, he can pay his fees in two instalments or as he takes out each class. Composition students pay an ENTRANCE FEE of £3 3s., once for all, occasional students pay £1 1s. for each Winter Session, and 10s. 6d. for each Summer Session during which they may be in attendance upon lectures. The regulations in connection with the attendance of medical students (see p. 53) apply also to Dental students, whose composition fee, however, covers normally three and not five years.

COMPOSITION FEES.—The Composition Fee for the courses required for the L.D.S. of any of the Corporations *alone* is £60, that for the courses required for the L.D.S. and the degree in Dentistry of the University is £75, and that for the L.D.S. in combination with the M.R.C.S. and L.R.C.P. is £85. Each of these fees covers the cost of the courses given at the University for the qualifications indicated, but does not include incidental fees nor fees for Hospital teaching. Each of these Composition fees is payable in two instalments, one on entrance, the other at the commencement of the second year of study.

INCIDENTAL FEES.—These fees are intended to cover the cost of apparatus, material, &c., used in the various practical classes. They are, with the exception of the fee for dissecting which is paid to the Professor of Anatomy, payable to the Secretary.

	£	s.	d.
Dissecting Room (each winter)	1	11	6
" " (each summer)	0	10	6
Practical Physiology	2	2	0
" Pathology... ..	1	11	6
Dental Histology	1	1	0

CLASS FEES.—Students wishing to do so can pay for each class as they take it, the following table showing the fees for each course.

	£	s.	d.
Anatomy and Practical Anatomy (each winter) ...	11	11	0
* " " " (one summer) ...	3	3	0
Physiology	6	6	0
" Practical	4	4	0
Chemistry	4	4	0
" Practical	3	3	0
*Elementary Biology	5	5	0
Physics	5	5	0
*Pathology	4	4	0
* " Practical	4	4	0
Bacteriology (special Dental)	1	1	0
Medicine	6	6	0
Surgery	6	6	0
Dental Anatomy	3	3	0
" Surgery	3	3	0
" Mechanics	2	2	0
" Metallurgy	2	2	0
" " Practical	2	2	0
Diseases of the Mouth	2	2	0
Dental Histology	2	2	0
Practical Dental Surgery	2	2	0

NOTE.—Subjects marked with an asterisk are *not* required by students only reading for the L.D.S. Composition students requiring to repeat a course will be charged a half-fee for the same. In the case of Practical Anatomy this will be £3 3s.

EXAMINATION FEES.—The fees payable before a student is admitted to any of the examinations are set down below. A student failing at any examination will be called upon to pay a half-fee when next presenting himself for the same examination.

	£	s.	d.
Matriculation	2	0	0
First Examination	5	0	0
Second Examination	5	0	0
Final Examination for B.D.S.	5	0	0
Examination for M.D.S.	10	0	0

For General Surgical Hospital Practice, Lectures, and Demonstrations :

SURGERY: Two Winters... ..	£10	10	0
„ One Winter	6	6	0

Payable to W. F. Haslam, Esq., F.R.C.S., 54, Newhall Street.

For the convenience of those desiring to ascertain the total cost of obtaining the License of Dentistry of the Royal College of Surgeons of England, and the Degree of Bachelor of Dental Surgery in the University, the following table has been drawn up. It presumes that the student enters by the Composition method and makes no allowance for failures at examinations. No allowance is made for the cost of books or instruments for private tuition, if necessary, or for the fee for apprenticeship.

	£	s.	d.	£	s.	d.
MATRICULATION	2	0	0			
	<hr/>			2	0	0
FIRST WINTER.—Entrance Fee	3	3	0			
Half Composition ..	37	10	0			
Dissections	1	11	6			
	<hr/>			42	4	6
FIRST SUMMER.—Half Dental Hospital ...	10	10	0			
Practical Physiology ...	2	2	0			
	<hr/>			12	12	0
<i>First Examination, University</i> ...	5	0	0			
	<hr/>			5	0	0
<i>Prel. Sci. Exam. L.D.S.</i> ...	3	3	0			
	<hr/>			3	3	0
SECOND WINTER.—Half Composition ...	37	10	0			
General Hospital ...	10	10	0			
Dissections ...	1	11	6			
Dental Histology ...	1	1	0			
	<hr/>			50	12	6
SECOND SUMMER.—Half Dental Hospital	10	10	0			
Dissections	0	10	6			
	<hr/>			11	0	6
<i>Second Examination, University</i> ...	5	0	0			
	<hr/>			5	0	0
<i>First Professional, L.D.S.</i> ...	2	2	0			
	<hr/>			2	2	0
THIRD WINTER.—Practical Pathology ...	1	11	6			
	<hr/>			1	11	6
THIRD SUMMER.— <i>Final L.D.S.</i>	15	15	0			
	<hr/>			15	15	0
FOURTH YEAR.—General Hospital ...	6	6	0			
	<hr/>			6	6	0
<i>Final B.D.S. Examination</i> ...	5	0	0			
	<hr/>			5	0	0
	<hr/>			£162	7	0

REGULATIONS AFFECTING PAST AND PRESENT STUDENTS OF THE BIRMINGHAM MEDICAL SCHOOL,

Approved by the University Council, 13th June, 1900.

That Past Students of the Birmingham Medical School who have taken out their whole course in Birmingham, and are duly qualified Medical Men, be permitted at any period during the five years commencing on the 1st of October, 1900, to present themselves for a Final Examination for the Degrees of Bachelor of Medicine and Surgery.

SUBJECTS FOR EXAMINATION.

- (a) *Medicine, including Therapeutics.
- (b) *Surgery and Operative Surgery.
- (c) *Midwifery and Gynæcology.
- (d) Pathology and Bacteriology.
- (e) Forensic Medicine and Toxicology.

* This Examination will consist of three parts:—(1) written papers, (2) *vivâ voce*, (3) clinical.

That all present students of the School of Medicine who originally entered as first year students of the school, and have since regularly pursued their studies in the school, be permitted to present themselves for the examinations of the University without passing its matriculation examination, and without repeating any courses of lectures which they may already have taken out.

That all students of the School of Medicine falling under the above category who have passed any medical examinations in any British or Irish University be allowed to count such examination or examinations in lieu of the corresponding examination or examinations in the University of Birmingham, but that no such allowance be made in the case of students who have passed examinations conducted by licensing bodies other than Universities. Provided that in all cases it shall be essential that the student shall pass the Final Examination of the University of Birmingham.

ACADEMIC COSTUME.

GOWNS.

Undergraduates.—Gown of black stuff, similar to the Oxford Scholars' Gown, with the fore-arm seam open.

Bachelors.—Gown of black stuff with an open sleeve.

Masters.—Gown of black stuff or silk, similar to a Cambridge M.A. Gown with ribbons, but with a ┐-shaped slit in the sleeve.

Doctors.—Robe of scarlet cloth of the same shape as the Cambridge Doctors' Gown, trimmed with silk of the colour characteristic of the Faculty.

Doctors' Undress.—Gown of black stuff or silk of the same shape as the Masters' Gown, but edged with braid.

HOODS.

FACULTY OF SCIENCE.

B.Sc.—Black silk or stuff edged with silver-grey watered silk.

M.Sc.—Black silk lined with silver-grey watered silk.

D.Sc.—Scarlet cloth lined with silver-grey watered silk.

FACULTY OF ARTS.

B.A.—Black silk or stuff edged with electric-blue watered silk.

M.A.—Black silk lined with electric-blue watered silk.

D.Phil. and D.Litt.—Scarlet cloth lined with electric-blue watered silk.

FACULTY OF MEDICINE.

M.B. and B.Ch.—Black silk or stuff edged with cardinal watered silk.

M.Ch.—Black silk lined with cardinal watered silk.

M.D.—Scarlet cloth lined with cardinal watered silk.

DEPARTMENT OF DENTISTRY.

B.D.S.—Black silk or stuff edged with dark red (Grenat) watered silk.

M.D.S.—Black silk lined with dark red (Grenat) watered silk.

HONORARY DEGREE.

LL.D.—Scarlet cloth lined with bronze-green watered silk.

CAPS.

Undergraduates, Masters, and Doctors will wear the ordinary square College Cap, and Doctors in full dress will wear a cap of black velvet with a gold cord, lined with the colour characteristic of the Faculty.

Robe-Makers to the University :—

MESSRS. EDE & SON, 93 AND 94, CHANCERY LANE, LONDON.

SYLLABUS

OF

TECHNICAL COURSES

IN THE

FACULTY OF SCIENCE.

APPLIED GEOLOGY.

Professor: CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor: W. W. WATTS, M.A., Sec.G.S.

Demonstrator: FRANK RAW, B.Sc., Lond.

This Course is projected for those who are unable to attend a complete systematic Course in Geology, but who are desirous of knowing the principles and practice of the science in so far as they can be utilised in business, professional and every-day life.

This Course will commence with a section dealing with the fundamental facts and principles of Geology. This will be followed by sections dealing with Geology as applied to water-supply, sanitation, agriculture, &c., and a further group of sections dealing with the application of geology to architecture, mining, &c.

Section I. must be taken by all. The remaining sections are elective.

SECTION I.

Geological principles.—The rocks and rock formations; geological maps or sections, their interpretations and uses. *Winter Term.*

SECTION II.

Geology and Water Supply.—

- (a) Overground waters and their action and employment; drainage, sanitation, overground water supply, reservoirs.
- (b) Underground waters and water supply, water-bearing rocks and formations, springs, wells, hard and soft waters. *Winter Term.*

SECTION III.

Geology and Architecture.—Chief British building stones—their characters and distribution; fire-clays; brick, clays; cements, building sites, road metals. *Spring Term.*

SECTION IV.

Mining Geology.—Fuels of Britain; the coal-fields; coal and coal-mining, &c.; ores and ore-bearing formations; chief ore-bearing districts of Britain and the Colonies.

Each Section will include about ten lectures and demonstrations, two hours a week, during the Winter and Spring Terms. Hours by arrangement.

FEE for each Section:—10s. 6d.

METALLURGY.

Professor : PERCY F. FRANKLAND, Ph.D., Würzburg, B.Sc.,
Lond., F.R.S.

Lecturer and Instructor in Assaying : GODFREY MELLAND,
B.Sc, Vict., Assoc. R.S.M.

LECTURE COURSES.**I.**

Tuesdays and Thursdays at 10.30 throughout the Session.

SYLLABUS.

(a) General Principles. Chemical and Physical Properties of Metals. Furnace Materials :—Acid, Basic, and Neutral. Composition of Fire Clay, Manufacture and Testing of Fire-bricks and Crucibles. Physical and Chemical Properties of Fuel. Principles of Combustion. Pyrometers. Gaseous Fuel. Preparation of Coke, Charcoal, and Patent Fuels. Slags and Fluxes. Composition and Character of Slags. Utilization of Slag. Classification of Metallurgical processes. Description of Furnaces.

(b) Composition, Characters, and Preliminary Treatment of Iron Ores. Manufacture of Cast Iron. Theory of the Blast Furnace. Chemical and Mechanical Properties of Cast Iron. Foundry Practice. Manufacture of Wrought Iron. Chemistry of the Puddling Furnace. Properties of Wrought Iron. Manufacture and Properties of Steel. Puddled, blister, shear, and crucible steel. Bessemer and Siemens' Steel. Basic Process. Chemical Composition and Mechanical Testing of different varieties of Iron and Steel.

(c) Preparation, Properties, and Principal Alloys of Copper, Zinc, Tin, Antimony, Bismuth, Nickel, Aluminium, Gold, Silver, Lead, Mercury, Platinum, Iridium, and Palladium. Principles of Electro-Metallurgy.

FEE for the Session—£3 3s.

TEXT BOOKS RECOMMENDED :—

Roberts-Austen's Introduction to Metallurgy. (Griffin.
Huntington and McMillan's "Metals." (Longmans.)
Phillips' Metallurgy. (Griffin.)
Rose's Gold. (Griffin.)
Turner's Iron. (Griffin.)

For Electro-Metallurgical Work :—

McMillan's Treatise on Electro-Metallurgy (Griffin).

As it will be necessary to assume that Students in this department possess an elementary knowledge of Chemistry, those who desire to profit by these Lectures are advised to attend first a course of instruction in Theoretical and Practical Chemistry.

II.

A Course of Lectures and practical work, specially designed for engineering Students of the third year, will be arranged for throughout the year, the former at 11.30 on Wednesdays, the latter from 2.30 to 5 on Fridays.

FEE :—£4 4s.

III.

A Course of about thirty Lectures for Senior Students is given.

The class meets once a week, at times arranged at the beginning of the session, to suit the other engagements of students.

FEE :—£1 11s. 6d.

IV.

A Course of Lectures and practical instruction in Determinative Mineralogy and Blowpipe Analysis will be given during the Winter Session.

FEE :—£3 3s.

METALLURGICAL LABORATORY.

The Metallurgical Laboratory, which adjoins the Chemical Department, has been extended and furnished with much new apparatus. Beside the ordinary appliances of a chemical laboratory it is supplied with accurate assay balances, with wind, muffle, and gas furnaces for dry assaying; with pyrometers and calorimeters for thermal investigations; and with microscopes for studying the structure of metals and alloys.

An Electro-Metallurgical installation has been laid down for the study of the principles and practice of electro-plating, electro-typing and electro-refining, and of electro-deposition generally.

The work in the laboratory is arranged to suit the individual requirements of the students. Instruction is given in all the usual methods of wet and dry assaying and in the reactions which underlie various metallurgical processes. Senior students are encouraged to undertake research work bearing upon their intended future avocations.

SPECIAL ARRANGEMENTS FOR THOSE ENGAGED IN
PROFESSIONS OR IN BUSINESS.

Special facilities will be offered to proprietors, managers, or assistants of factories, and to others engaged in technical or professional work, who desire either to study the technology of their subject, to investigate new processes, or to work out improvements in those which are now in operation. Every endeavour will be made to adjust the days and hours of attendance to the varying business engagements of those who propose to avail themselves of the laboratory for such purposes.

All students work independently, and as far as practicable at the hours best suited to their arrangements.

Students may commence work in the laboratory at any time. Laboratory students, upon admission, pay a deposit of £1 as caution money. This is returned at the end of the course, after deducting the cost, for breakages, &c., incurred. Caution money will not be repaid unless claimed by the student within one year of finally leaving College.

Syllabus of Practical Metallurgy and Assaying.

Examination of Fuel.—Commercial Analysis, including Ash, Moisture, Sulphur, Coke, and Calorific Power.

Furnace Materials.—Examination and testing of fire-clay.

Metals and Alloys.—Properties of Copper, Zinc, Tin, Lead, &c. Preparation of different varieties of Brass, Bronze, &c.

Oxidation and Reduction.—Experiments illustrating the use of oxidising and reducing agents in metallurgy. Lead Assay.

Slags and Fluxes.—Experiments illustrating the composition and formation of slags.

Iron Assay.—Assay of Iron Ores, Slags, and Fettling, for Iron, Silica, Phosphorus, &c. Dry Assay of Iron.

Electro-Metallurgy.—Deposition of Gold, Silver, Copper, Brass, and Nickel.

Gold.—Assay of Gold Ores, Lemel, and Bullion.

Silver.—Assay of Silver Ores, Wet and Dry Assay of Silver, Preparation of Silver Alloys.

For the treatment of Gold and Silver Ores an Amalgamating Pan is provided by the Department.

Copper.—Wet and Dry Copper Assay; Analysis of Brass, Bronze, German Silver, and other Copper Alloys.

Tin, Lead, Zinc, Antimony, Nickel, Cobalt, and Aluminium.—Assay of Ores and Analysis of most important Alloys.

Iron and Steel.—Complete Analysis of Iron Ores, Cast Iron, Wrought Iron, and Steel.

Fuel.—Complete Analysis of Coal, Coke, &c. Gas Analysis as applied to metallurgical operations.

Furnace Materials.—Assay and Analysis of Clay, and other fire-resisting materials.

Enamels and Glazes.—Analysis of Enamels and Glazes.

Electro-Metallurgy.—Electro-deposition and Electro-refining of Metals, &c.

FEES :—

	All day.	Three hours per day.	Three hours per day; three days a week.
	Guineas.	Guineas.	Guineas.
One Term ...	7	4½	2½
Two Terms ..	13	8½	5
Three Terms...	18	12	6½

Gas, fuel, water, and ordinary reagents are supplied by the College, but Students must provide themselves with a set of Apparatus; also with crucibles and materials when large quantities are required.

TEXT-BOOKS RECOMMENDED—Beringer's Text-Book of Assaying (Griffin). Blair, Chemical Analysis of Iron (Lippincott). Arnold, Steel Works Analysis (Whitaker).

Excursions.

It is hoped that Excursions to Metallurgical Works in the neighbourhood of Birmingham may be arranged from time to time as in previous years.

TIME TABLE.

METALLURGY.	Mon.	Tues.	Wed.	Th.	Fri.	Sat.
Lectures—						
Course I. ....	...	10.30	...	...	10.30	...
„ II. ....	...	...	11.30	...	...	...
„ III.	One Hour weekly ; by arrangement.					
„ IV. and } Practical }	...	2.30-5	...	...	...	...
Laboratory—open ...	9.30-5	9.30-5	9.30-5	9.30-5	9.30-5	9.30-1

ENGINEERING.

(Civil, Mechanical and Electrical.)

Professor: F. W. BURSTALL, M.A., Cantab., A.M.I.C.E.,
M.I.M.E.

Lecturer and Demonstrator: F. H. HUMMEL, A.M.I.C.E.

Lecturer on Technical Electricity: D. K. MORRIS, Ph.D.,
A.M.I.E.E.

Junior Demonstrator: JAMES P. WOOD, B.E.

CIVIL AND MECHANICAL ENGINEERING.

The department of Engineering is intended to provide for students systematic training in the scientific principles which are the foundation of Engineering. The training is not intended to supersede the period of pupilage in either works or office, but purposes to act rather as an auxiliary to the practical experience which can only be obtained in actual practice.

The complete Engineering Course lasts for three years, and includes study in the pure sciences of Mathematics, Physics, Chemistry, and Geology, and in the applied sciences of Civil, Mechanical, and Electrical Engineering, and Metallurgy.

A preliminary year's study has been arranged for those students who are not sufficiently advanced to commence with the first year's course, but in all cases it is advisable to consult the Professor as to the classes the students should take up.

The training in the Engineering Department is very largely practical and experimental in its character, the Engineering Laboratory having been recently extended, and fitted with the most modern appliances for the practical demonstration of the properties of constructional materials, and of the laws which govern the economical working of steam and gas engines.

The Laboratory contains a large testing machine, made by Messrs. Joshua Buckton & Co., of Leeds, capable of exerting a pull of 50 tons, and is fitted with special appliances for accurate measurements in tensile, com-

pressive, bending, and shearing stresses; a torsional testing machine, capable of exerting a twisting moment of 10,000 inch lbs.; a machine for testing cement; a journal friction-testing machine; a compound steam engine of 30-horse-power, fitted with all apparatus for experimental work; a Cornish boiler working up to a steam pressure of 200 lbs. per square inch. A 12-horse-power gas engine, made by Messrs. Tangyes Limited, is adapted for testing as well as for driving the machinery.

The Workshop contains lathes, drilling, shaping and milling machines, together with all appliances for hand work at the vice or forge.

Diploma Regulations.

Attendance on the full course stated in the Calendar for the First and Second Year is required.

In the Third Year candidates must take up at least three classes.

Candidates must obtain at least a second class in the Pure Mathematics, Course I.; they must also obtain at least two first classes in each year.

In the third year candidates must obtain first classes in both lectures and laboratory in the special branch of Engineering they take up, and one other first class.

The Diploma will be awarded for Civil, Mechanical, or Electrical Engineering.

SCHOLARSHIPS.

The ordinary Scholarships, and the Special Scholarship of £150 per annum, tenable for two years, offered by the Commissioners of the Exhibition of 1851, are open to Engineering students in common with other students of the University.

Each year Two Bowen Scholarships of about £96 each for original investigation of advanced character in a special branch of Engineering are offered to University students.

PRELIMINARY YEAR.

- (i.) Pure Mathematics, Preliminary Course.
- (ii.) Physics, Preliminary Course.
- (iii.) Elementary Chemistry.
- (iv.) Engineering : (a) Drawing, (b) Workshop.

The work in the Workshop consists of simple exercises on the use of the hammer, chisel, and file, and in the use of the lathe.

DIPLOMA COURSES.**FIRST YEAR.**

- (i.) Pure Mathematics, Course I.
 - (ii.) Physics (a) Preliminary Course in Mechanics ;
(b) Elementary Electricity.
 - (iii.) Metallurgy.
 - (iv.) Engineering.
-

ENGINEERING CLASSES.**CLASS A.****DRAWING.**

Tuesday and Thursday from 2.30 to 5, throughout the Session.

FEE :—£3 3s.

In this class the students are taught to make drawings from their own hand sketches of models of simple machine parts.

The University provides drawing boards, curves, splines, &c. Students are required on entering the class to deposit with the Professor the sum of 10s., to cover the cost of drawing materials (paper, pencils, note-books, &c.). The unexpended balance will be returned when the student leaves the class.

The Drawing Class-room is open from 9.30 till 1, and from 2.30 till 5 every day except Saturday.

CLASS B.

WORKSHOP CLASS.

Monday and Friday, from 2.30 to 5.

FEE:—£6 16s. 6d.

In this class the student first starts work at the vice, and when sufficiently advanced he is instructed in the use of machine tools.

The work at the vice consists of simple exercises on the use of the hammer, chisel, and file; and the work with the machine tools includes easy examples, requiring the use of a lathe, drilling machine, shaping machine, &c.

The College supplies, without charge, all tools and materials.

CLASS C.

LECTURES AND EXERCISES.

Lectures, on Mondays, Wednesdays, and Fridays, at 10.30. Exercises, on Tuesdays and Thursdays, at 12.30.

DESCRIPTIVE ENGINEERING.

The Lectures will include the description of tools and machinery used in engineering, and will be illustrated by a large collection of lantern slides.

Hand Tools for Wood and Iron:—The plain lathe, engine lathe, slide rest, screw cutting, self-act and cross traverse, large lathes, special lathes (such as the capstan lathe), milling machine, planing machines, shaping machines, slotting machines, drilling machine, sensitive and multiple drills, grinding machines, boring machines.

Types of Boilers and Boiler Fittings:—Cornish, Lancashire, vertical, locomotive, marine, water tube, feed heaters, economizers, super-heaters.

Steam engine parts.—The cylinder, slide valve, piston, stuffing box, kinds of packing, crosshead, guides, connecting rod, crank shaft, eccentric, bearings, flywheels.

Types of steam engines.—Mill engine, locomotive, marine, high speed, pumps and pumping engines, duplex pumps, feed pumps, centrifugal pumps.

Gas and oil engines.—Otto cycle, valves, governors, ignitors, Priestman oil engine, Hornsby oil engine, Diesel motor.

GRAPHICS.

Mensuration.—Areas of triangles, polygons, and figures with curved boundaries. Sign of area as determined by direction of boundary. Looped and other complex figures.

Vectors and Rotors.—Properties and methods of addition and subtraction. Vector polygon; examples with velocities and displacement. *Position vectors* and their application to determination of *Mass centres*. Mass centres of arcs, segments and sectors of circles, &c., and general construction for irregular figures. Graphical constructions for moment of inertia.

Rotors as localised vectors; link or funicular polygon applied to determination of line of action of resultant of forces.

Statics.—Conditions to be fulfilled by vector and link polygons in order that forces may be in equilibrium. Special consideration of case where vector polygon is closed, and link polygon not closed. Triangle of forces. Simple problems on cranes and shear legs. Supporting forces of structures loaded in any way.

Framed Structures.—Application of vector polygon to determination of stresses in members of framed structures. Nature of stress produced—struts and ties and the usual forms they take in practice.

Roofs.—Forms suitable for different spans; King post, French, Fink, Sickle, and three-hinged arch truss. Loads; wind pressures and lateral bracing.

Bridge Trusses and Girders.—Loads and method of application. Forms of trusses: Warren, Howe, Pratt, Whipple, Bolman, and Bowstring. Girders with double system of bracing. Special cases in roofs and girders where bracing is not of simplest kind; method of moments and sections. General treatment of stability of frames and reciprocal figures.

Diagrams of Shearing Force and Bending Moment.—Their construction, and relations of one to the other. Diagrams for concentrated loads on girders supported at ends, cantilevers and continuous girders. Diagrams for uniformly distributed loads wholly or partially covering girder. Diagrams for one or more rolling loads and moving uniform loads. Train loads.

General discussion of bridge types and their relations to one another. Parallel girders; Bowstring, cantilevers, arches. Suspension bridges; parabolic chain, catenary. Equilibrium polygon; three-hinged arch; position of load for maximum stress in any member. Line of thrust in masonry arches, and line of resistance for masonry dams and retaining walls.

CLASS D.

SURVEYING.

Summer Term.—Saturdays, from 9.30 till 1.

FEE:—£2 2s.

In this class the student is instructed in the method of surveying with the chain, and the use of the simpler surveying instruments, optical, square, prismatic compass, etc.

The students make an actual survey, which is afterwards plotted to scale in the drawing office.

SECOND YEAR.

- (i.) Applied Mathematics, Course I.
 - (ii.) Physics, Course I.
 - (iii.) Technical Electricity.
 - (iv.) Engineering.
-

ENGINEERING CLASSES.**CLASS A.****DRAWING.**

Tuesday and Thursday from 2.30 to 5 throughout the Session.

FEE:—£3 3s.

In this class the student starts designing, the examples being chosen to correspond with the lectures on Machine Design.

The first designs will be of a very simple character, but they will be arranged to gradually increase in complexity, and at the end of the course the student will be expected to design detail parts of machines and structures.

CLASS B.**LABORATORY.**

Monday and Friday from 2.30 to 5 throughout the Session.

FEE:—£7 7s.

The laboratory work consists of simple experiments on the efficiency of various pulley blocks, friction and efficiency of machine tools, etc. Friction of belts on pulleys and journal friction. The forces acting on cutting tools, inertia of a rotating body, and some experiments with the large testing machine.

CLASS C.**LECTURES AND EXERCISES.**

Lectures—Monday, Wednesday, and Friday, at 9.30.

Exercises—Tuesday and Thursday, at 12.30.

FEE, £5 5s.

Elementary course on strength of materials, including behaviour of ductile metals in tension, yield point, resilience, impact repetition of stresses, Wöhler experiments, tensile strengths of iron, steel, bars, copper, etc., and alloys.

Compression.—Short columns, long columns. Euler and Gordon formulæ, cast-iron columns.

Bending.—Neutral axis, curvature, modulus of cross section, moment of inertia, graphic methods, calculation of the strength of joists, box girders, angles, tees.

Shear.—Shear in pin and rivets, single and double shear, modulus of shear, calculation of strength of rivetted joints, connection between module of shear and tension.

Torsion.—The strength and stiffness of solid and hollow circular shafts.

Complex stresses.—Bending and tension, bending and compression.

Elementary theory of heat engines.—The laws of thermo-dynamics, properties of air and other permanent gases, specific heat, isothermal and adiabatic curves, the Carnot cycle, the Rankine cycle, the air engine, properties of steam, latent heat, total heat of formation, Carnot cycle for steam, Rankine cycle for steam, perfect steam engine, behaviour of steam in the cylinder, initial condensation, effect of walls, use of steam jacket, compound and triple expansion, superheating, Willan's law.

Kinematics of Machinery. — Constrained motion, relative motion, virtual centre links, chains, mechanisms, wheel trains, dynamics of mechanism, velocity and acceleration diagrams, force and work diagrams, parallel motions, lower pairing, higher pairing, wheel teeth, curves, screw gearing, bevel gearing, friction, sliding friction, rolling friction.

Machine Design. — General principles underlying machine design. Properties of materials used, and their

advantages and defects and parts for which they are suitable. Straining actions. Stress, physical constants for ordinary materials, factors of safety, working stress for dead and live loads.

Fastenings, Screws.—Method of drawing helix, standard forms and dimensions of threads, Whitworth sellers, friction of screws, square, V and buttress thread, multiple threaded screws. Screw bolts, studs, set screws. Standard proportion of bolts and nuts, lock nuts.

Keys and Cutters.—Forms of keys, sunk, key on flat, saddle key. Cone keys. Taper and dimensions Gib and cotter joint. Special precautions to be taken with alternating stresses, methods of adjustment and fastening.

Riveted Joints.—Proportions of rivets, riveting, punching, drilling, caulking. Forms and proportions of joints, size of rivets, pitch and overlap. Shearing resistance of rivets and tenacity of plates before and after rivetting calculation of pitch. Arrangement of groups of rivets in tees, etc. Graphic method of designing joints. Efficiency of joints.

Boilers.—Thickness of shell, junction of plates, stays, angles.

Pipes and Pipe Joints.—Materials and manufacture, limiting sizes. Cast-iron, wrought-iron, steel, copper, lead. Calculation of thickness.

Joints.—Flange, spigot and faucet. Hydraulic boiler and condenser tubes and joints. General arrangement of steam piping.

Transmissive Machinery.

Belt Gearing.—Length of belt, speed cones, arrangement of belting. Materials of belts, joints in belts, working strength of belts. Resistance to slipping and power transmitted, calculation of sizes of belts. *Belt Pulleys.*—Cast-iron and wrought-iron, calculation of rim and arms, limiting velocities.

Rope Gearing.—Advantages of system and its limitations, strength of ropes, resistance to slipping,

calculation of size and number of ropes required. Pulleys for rope belting.

Friction and Toothed Gearing.—Toothless rollers, spur, bevel and skew bevel wheels. Friction gearing, calculation of pressures, wedge bearing, clutches.

Toothed Gearing.—Elementary considerations. Parts and proportions of teeth, condition determining form of teeth. Curves satisfying the condition. Cycloidal and involute teeth, and methods of drawing. Strength of wheel teeth, pitch.

Helical and Screw Gearing.—Worm wheels.

Chain Gearing.—Forms and proportions of chains, block and roller, stresses occurring. Chain wheels and method of finding tooth shape.

Shafting and Couplings.—Strength of shafts, twisting moment and transverse loads, variation in twisting moment. *Couplings*:—fast and loose, box, flange, cone, claw and friction couplings.

Journals, Pivots and Bearings.—Journal friction, complexity of laws, Towers' experiments, methods of lubrication and lubricants. Limiting pressures in important cases. *Bearings*:—forms of brasses and arrangement for particular forms of loading. Proportions of pedestals, brackets, hangers and wall fixings. Pivot friction, footstep and collar bearings, thrust block.

CLASS D.

SURVEYING.

Summer Term—Saturdays, from 9.30 till 1.

FEE, £2 2s.

This class is a continuation of the Surveying class of the first year. The work will consist largely of surveying with the theodolite, and levelling.

SENIOR YEAR.

Engineering, together with two of the following:—

- (i.) Pure Mathematics, Course II.
 - (ii.) Technical Electricity, Course II.
 - (iii.) Geology, Course I.
 - (iv.) Metallurgy, Course II.
-

ENGINEERING CLASSES.**CLASS A.****DRAWING.**

Monday and Friday, from 2.30 to 5, throughout the Session.

FEE £3 3s.

In this class the student will prepare designs for complete machines, and structures such as roofs, bridges, masonry dams, dynamos, transformers, etc.

CLASS B.**ENGINEERING LABORATORY.**

Wednesday, from 9.30 to 5, throughout the Session.

FEE £8 8s.

The work in this class will consist of experiments on the strength of materials in tension, compression, bending-torsion.

Experiments on the strength of cement and cement and sand.

The flow of water through pipes, orifices, and over weirs.

The testing of steam engines under various conditions:—simple, compound, condensing, non-condensing, etc. The testing of gas engines.

Advanced students will be allowed to undertake special research work.

CLASS C.**LECTURES.**

Tuesday, Thursday, and Friday, at 11.30, throughout the Session.

FEE :—£3 13s. 6d.

Hydraulics.—General properties of fluids, discharge over weirs and through orifices, Benoulli's equation, fluid friction, friction in pipes, hydraulic gradient, loss of head due to change of section, impact of fluids, reaction wheels, under and overshot wheels, turbines.

Strength of Materials.—The deflection and slope of beams, theorem of three moments, shear in beams, design of large girders, analysis of stress and strain, ellipse of stress, Grashof's equations, strength of thick tubes, strength of flat plates, stability of earthwork and masonry, strength of retaining walls and chimneys.

Theory of the Heat Engines.—Air engines, the regenerator, inverse heat engines, the Carnot cycle, principle of reversibility, properties of steam, calculation of density, entropy diagram, adiabatic lines, Rankine cycle, testing of engines and boilers, calculation of results, theory of gas engines, testing of gas engines, calculation of results.

CLASS D.**SURVEYING.**

Saturday, from 9.30 till 1, during the Summer Term.

FEE :—£2 2s.

In this class the more advanced methods and operations in surveying are taken.

Traversing with the theodolite.

Setting out of curves.

ELECTRICAL ENGINEERING.

Students intending to follow Electrical Engineering as a profession are advised to take the General Engineering Course for the first two years, in which are included Electrical Classes, which cover the principles of the subject. In the third year the student will specialise and study the application of these principles to practice, at the same time continuing to study allied subjects, such as Metallurgy and Mechanical Engineering.

The Electro-technical Course is divided into two parts: Course I., taken by all second year Engineering Students, and Course II., for third year Engineering Students who intend to pursue Electrical Engineering as a profession.

The Lectures in the General Course will treat of the main principles upon which the action of Electrical machinery depends. They will be illustrated wherever possible with experimental demonstrations. Students taking this Course are expected to have an elementary knowledge of Electrical Physics as well as Mechanics.

COURSE I.

Tuesday and Thursday at 11.30.

Magnets. Magnetic fields. Lines of magnetic force. The magnetic qualities of iron and steel hysteresis. Permeability. Magnetic induction.

Electric currents. Their direction and magnitude as arrived at from their magnetic, thermal and chemical effects. Electrical resistance. Ohm's law. Practical electrical units. Electrical energy. The ampere, volt, ohm, watt and Board of Trade unit. Calculation of 'drop' in electrical conductors. Design of standard and regulating resistances. Temperature changes.

Electrical Instruments; the different principles adopted. Details of construction of standard types. Elements of design of moving parts for greatest reliability and economy. Electrostatic voltmeters. Standards of electro-motive force and resistance. Comparison of electrical instruments with these standards. Design and use of low resistance standards. The Potentiometer system of measurement. Wheatstone's Bridge.

Electric lighting. Glow-lamps, their construction and qualities. Efficiency at different electrical pressures. Lamp-sockets, switches and fuses. Electric wiring. Measurement of insulation resistance. The electric arc. Arc-lamps, open and enclosed.

Electro-chemical action. Work done by, and electro-motive force required for electro-chemical decomposition. Polarization. Behaviour of liquid resistances. Secondary cells. Construction and employment in central stations. Load factor. Installation and maintenance of storage batteries. Primary cells. The Leclanché.

Lateral force upon a conductor carrying current in a magnetic field. Work done by its motion. Units of force and work. C.G.S. electrical units. Relation to practical units.

Induced electro-motive force and current. Experiments in electro-magnetic induction. The telephone and induction coil. Electric currents in inductive circuits. Mutual Induction. Lenz's law. Eddy currents.

Dynamos and motors. First principles of design. Ring and drum armatures. Field magnets, series and shunt winding.

The magnetic circuit. Ring magnets. The measurement of permeability and hysteresis. Magnetizing force due to coils of wire. Magnetic reluctance.

Calculation of induced electro-motive force. Electrical pressure generated by dynamos. Back electro-motive force and speed of motors. Starting resistances. Regulation of speed of motors. Design of magnetic circuit of dynamo. Sources of loss. Simple dynamo and motor tests.

FEE :—£2 12s. 6d.

Laboratory, Wednesday, from 2.30 to 5, and Saturday, 9.30 to 1.

FEEs :—One day per week, £4 4s. ; two days, £7 7s.

Course II. is for students who have passed Course I. and obtained at least a Second Class

COURSE II.

Wednesday and Friday, at 10.30.

Electric currents in inductive circuits. Unit of Inductance. Time constant.

The design of dynamos, motors, motor transformers and other continuous current machinery. Sparkless commutation. Brushes and holders. Bearings and foundations. Enclosed motors. Electric traction machinery, reduction gear, controllers, and electric brakes. Armature winding of bipolar and multipolar machines. Pre-determination of characteristics. Tests for efficiency and regulation.

Alternating currents. Derivation of fundamental formulæ. Graphical methods. Frequency. Impedance. Angle of lag. Power factor. Measurement of power in alternate current circuits. The Wattmeter. Polyphase currents. Rotating magnetic fields. Synchronous and asynchronous motors. Starting device.

Central stations for lighting and power distribution. Switch-board fittings, for low and high tension currents. Instruments, fuses and automatic cut-outs. Regulating resistances. Cables. Meters. House wiring regulations. Systems of distribution. Calculation of feeders for lighting and tramway circuits. Earth return. Rail bonding.

Alternating currents in circuits having inductance and capacity. Electrical resonance and oscillations. Use of condensers. Long distance telephony. Lightning arresters.

Design of alternators, polyphase generators, transformers and asynchronous motors. Parallel running of alternators. Efficiency and regulation tests of transformers.

Industrial applications of electricity in chemistry and metallurgy.

Electrical transmission of power. Comparative merits of different systems.

FEE :—£2 12s. 6d.

Laboratory, Tuesdays and Thursdays, 2.30 to 5.

FEE :—£7 7s.

The Electrical Engineering Laboratory contains facilities for all classes of electrical testing work, and has recently acquired two 5-kilowatt Dynamos by Messrs. Chamberlain and Hookham, two 2-phase Alternators by Messrs. Thos. Parker of Wolverhampton, a 2-phase motor, an Experimental Transformer by Messrs. Johnson & Phillips, a Photometric Gallery for arc and glow lamp tests, and a number of new instruments, including several Weston switch-board instruments, wattmeters by Messrs. Elliott Bros., two Hartmann & Braun instruments, electricity meters by Chamberlain and Hookham, &c., &c.

A battery of accumulators provides constant pressure for testing purposes. The Laboratory Courses are arranged to illustrate the respective lecture courses as fully as possible.

Students taking the Course I. will familiarize themselves with the Wheatstone Bridge and Potentiometer systems of electrical measurements, the calibration of electrical instruments, and the conduct of simple tests on electrical machinery.

In the Advanced Laboratory Course, students will obtain practice in making accurate electrical measurements of every description, in testing electric meters, cables, lamps, batteries, samples of iron, &c., and in the testing of all classes of continuous and alternate current machinery.

Third year students of Chemistry intending to specialise in Electro-chemistry are recommended to attend the lectures in Course I. and the Laboratory during the first and second terms.

TABLE OF CLASS HOURS AND FEES.

PRELIMINARY YEAR. SUBJECTS.	Sessional Fees. £ s. d.	CLASS HOURS.				
		Mon.	Tues.	Wed.	Thur.	Fri.
<i>Entrance Fee</i>	1 1 0					
MATHEMATICS—Preliminary Course ..	4 4 0	10.30	10.30	...	10.30	10.30
PHYSICS—Preliminary Course. Lectures—Session	4 4 0 {	11.30	11.30	...	11.30	...
Laboratory—2nd and 3rd Terms....		11.30	...	9.30	...	...
ELEMENTARY CHEMISTRY. Lectures { 1st Term	4 4 0 {	...	...	11.30	...	11.30
2nd Term		2—5	...	11.0	...	11.30
Laboratory—3rd Term	1 0 0	...	...	...	...	2—5
<i>Deposit for "Caution Money"</i> ...		...	...	...	...	...
ENGINEERING.— Drawing—Session	3 3 0	...	2.30—5	...	2.30—5	...
Workshop—Session	5 5 0	...	...	2.30—5	...	...
<i>Total Sessional Fees for Preliminary Year</i>	£23 1 0					

DIPLOMA COURSE. TABLE OF CLASS HOURS AND FEES.

JUNIOR or FIRST YEAR. SUBJECTS.	Sessional Fees. £ s d.	CLASS HOURS.					
		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<i>Entrance Fee</i>	1 1 0						
PURE MATHEMATICS, COURSE I.	4 4 0	12.30	11.30	...	11.30	12.30	...
ELEMENTARY MECHANICS— Winter and Spring Terms	2 2 0	...	9.30	...	9.30	...	...
ELEMENTARY ELECTRICITY— Summer Term	1 1 0	...	9.30	...	9.30	...	...
METALLURGY—	2 12 6	...	10.30	...	10.30	...	...
ENGINEERING—							
Lectures	} 5 5 0 {	10.30	...	10.30	...	10.30	...
Exercises .....		...	12.30	...	12.30	...	...
Drawing	3 3 0	...	2.30—5	...	2.30—5	...	...
Workshop	6 16 6	2.30—5	...	...	...	2.30—5	...
Surveying—3rd Term	2 2 0	...	...	...	...	...	9.30—1
<i>Total Sessional Fees for Junior or First Year</i>	£28 7 0						

DIPLOMA COURSE. TABLE OF CLASS HOURS AND FEES.

MIDDLE or SECOND YEAR. SUBJECTS.	Sessional Fees. £ s. d.	CLASS HOURS.					
		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<i>Entrance Fee</i>	1 1 0						
APPLIED MATHEMATICS, COURSE I. ...	4 4 0	10.30	10.30	...	10.30	10.30	...
PHYSICS, COURSE I.	5 15 6	11.30	...	11.30	...	11.30	...
TECHNICAL ELECTRICITY—							
Lectures—Session	2 12 6	...	11.30	...	11.30	...	...
Laboratory—Session	4 4 0	...	...	2.30—5	...	...	...
ENGINEERING—							
Lectures } Session {	} 5 5 0 {	9.30	...	9.30	...	9.30	...
Exercises		...	12.30	...	12.30	...	...
Drawing—Session	3 3 0	...	2.30—5	...	2.30—5	...	...
Laboratory & Workshop—Session	7 7 0	2.30—5	...	...	...	2.30—5	...
Surveying—3rd Term	2 2 0	...	...	...	...	...	9.30—1
<i>Total Sessional Fees for Middle or Second Year</i>	£35 14 0						

DIPLOMA COURSE. TABLE OF CLASS HOURS AND FEES.

SUBJECTS	Sessional Fees, £ s. d.	CLASS HOURS.				
		Mon.	Tues.	Wed.	Thur.	Fri. Sat.
SENIOR or THIRD YEAR.						
<i>Entrance Fee</i>	1 1 0					
PURE MATHEMATICS, COURSE II.	4 4 0	9.30	9.30	...	9.30	9.30 ...
PHYSICS, COURSE II. (M.E.)— Lectures—2nd and 3rd Terms	{ 3 13 6 }	10.30	...	10.30	..	10.30 ...
Laboratory—1st Term			By arrangement.			
TECHNICAL ELECTRICITY (M.E.)— Senior Class— Lectures—Session	2 12 6		By arrangement.			
Laboratory—Session	7 7 0		9.30—5	...	...	...
GEOLOGY, COURSE I.— Lectures	{ 5 5 0 }	10.30	...	10.30	...	10.30 ...
Laboratory (By Arrangement). ....		...	..	...	...	...
MIND, METALLURGY (C.M.E.)— Lectures—Session	1 11 6		By arrangement.			
Laboratory—Session	2 12 6		...	...	...	...
<i>Deposit for Condition Money</i>	1 0 0		...	...	...	...
SENIOR ENGINEERING— Lectures	{ 3 13 6 }	11.30	11.30	...	11.30	11.30 ...
Drawing—Session		2.30—5	...	...	...	2.30—5 ...
Laboratory—Session .....		...	9.30—5	...	...	...
Surveying—Summer Term (C.) .....		...	...	...	...	9.30—1

C.—Civil Engineering. M.—Mechanical Engineering. E.—Electrical Engineering.
 Note.—The Fees of Students taking a third-year Diploma Course are about £31 10s.

The British School of Malting and Brewing.

Board of Management.

THE PRINCIPAL OF THE UNIVERSITY.
 THE VICE-PRINCIPAL OF THE UNIVERSITY.
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 The PROFESSOR OF BOTANY.
 The PROFESSOR OF GEOLOGY.
 The PROFESSOR OF ENGINEERING.
 The PROFESSOR OF BACTERIOLOGY.
 THE PROFESSOR OF BREWING.

Director of the School: Professor ADRIAN J. BROWN, F.I.C.
Lecturer and Demonstrator: J. H. MILLAR, F.I.C.

MALTING AND BREWING.

INTRODUCTION.

The School of Brewing is intended to provide for students sound education in the scientific and technical principles on which the practice of Malting and Brewing and the kindred fermentation industries is based.

The necessity of scientific training as a requisite to modern advance in technology is day by day becoming better recognised by the manufacturers of this country, and in no branches of industry has this fact received fuller recognition than in those of Malting and Brewing. But hitherto educational opportunities combining systematic preliminary scientific teaching, with thorough training in technical principles, have been unattainable except at various Brewing Schools on the Continent, where the value of such a course of study has long been recognised. The School of Brewing is intended to supply the want for students in this country.

The object of the school is threefold :

- (1) To provide a complete course of scientific and technical training in all subjects connected with Brewing and Malting.
- (2) To provide short and special courses of instruction for students not taking the full course.
- (3) To conduct and encourage research work in subjects connected with the fermentation industries.

In drawing up the curriculum the Council have been able to secure the valuable assistance of the gentlemen whose names will be found in the list of Members of the Board of Management ; and as they will continue to direct the operations of the School the Council feel sure that it will be carried on in such a manner as fully to meet the requirements of the Brewing and Malting Trades.

FULL COURSE

It is assumed that the period at which most students will enter for the full course of study is at the close of an ordinary school education, therefore the subjects included in the first year's course, although determined mainly with a view to prepare for systematic technical training later on, are also selected to enable the students to benefit from the general advantages of a college education.

The complete Brewing Course lasts three years. In the first year Elementary Inorganic Chemistry, Physics, Botany, Mathematics, and Engineering Drawing are taken, with a modern language as an optional subject; but the first year's course of study is subject to alteration according to the students' previous education. The second year's course includes advanced chemistry, both inorganic and organic, with an extended course of laboratory work, practical elementary Bacteriology, Engineering and Electrical Engineering, and a short course of Lectures on Geology. The studies arranged for the two years' courses are not technical, but are carried on under the professors of the special subjects, and are intended in the main to thoroughly ground the students in the principles of the various sciences, so that when they enter the Brewing Laboratory in the third year they may be in a position to take full advantage of the training there and be able to grasp thoroughly the complicated scientific problems involved in the technology of Brewing.

The training in the Brewing School, which lasts for one year, will be very largely practical, the laboratory being specially fitted with modern apparatus for carrying on the course of instruction laid down in the syllabus, and during this technical training a special point will be made of giving students thorough practical experience in the judgment of hops, barley, malt, and other materials used by brewers. During the working of the course a series of lectures will be given by the professor dealing with all the main points connected with brewing, and following as nearly as possible the course of study in the laboratory, in order to emphasize the practical bearing of the work there; and at suitable times it is arranged,

through the kind permission of certain brewers, that the students, together with the professor, shall visit breweries and maltings in order that they may have practical illustration of the technical principles they are studying.

As the chief principles underlying the technology of Brewing are also comprehended in the kindred arts of Distilling and Vinegar-making, students of these subjects will also find great advantage in following the course of instructions laid down.

SHORT COURSES.

Although it is necessary (with certain exceptions referred to under Diploma Regulations) that the full course of instruction laid down should be followed by students qualifying for the Diploma in Brewing which will be granted by the Council, shorter courses of instruction in the Brewing Laboratory will also be arranged to meet the requirements of those students who, from being already engaged in technical work or from other reasons, are unable to follow the general course.

As the requirements of such students are liable to vary, the course of instruction to be followed is not laid down definitely, but will be determined for each student by the Director of the School.

Courses of instruction will also be arranged, more especially bearing on the technology of Distilling and Vinegar making.

Before entering for any course in the Brewing Laboratory it is desirable that students should have a fair knowledge of practical and theoretical chemistry, or be prepared, if possible, to follow a course of study in these subjects in the University.

SPECIAL COURSES AND RESEARCH WORK.

The Brewing Laboratory will be open to advanced students desiring special instruction, or to carry on research work under the guidance of the professor, for which every facility will be given.

It is advisable before entering for any course of study that the student should consult the Director of the School.

DIPLOMA REGULATIONS.

In order to obtain the Diploma in Brewing granted by the University, in the first place students are required to have attended regularly the full course of instruction in the pure sciences arranged, and to have passed a satisfactory examination in each ; but as the Board recognise that there may be students already qualified by previous training, they reserve the right of waiving all or part of these studies and examinations in special cases. In the second place all students must have attended lectures and have worked through a practical course in the Brewing School, and have passed satisfactorily a practical and written examination in the technology of Brewing. According to the result of this examination and the general character of the work done throughout the course, to which great importance is attached, a Diploma in Brewing will be granted.

The possession of such a diploma will be evidence that the owner has obtained, besides a full and complete general scientific training, such special knowledge as will enable him to cope with the important technical problems constantly arising in the brewing and malting trades.

THE BREWING LABORATORY.

The Laboratory will be opened daily from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 1 p.m.

Each student will work independently, and will be guided in his operations by the Professor or his assistant.

FEES.

	All day.	Three hours per day.	Three hours per day, five days a week.	Three hours per day, three days a week.
	<i>Guineas.</i>	<i>Guineas.</i>	<i>Guineas.</i>	<i>Guineas.</i>
ONE TERM	7	4½	4	2½
TWO TERMS.....	13	8½	7½	5
THREE TERMS...	18	12	11	6½

Caution Money deposit, £1.

The chief apparatus required will be supplied by the University, subject to the condition that breakages are made good. Some simple apparatus must be provided by the students, but the cost of this need not be large.

ABRIDGED SYLLABUS OF WORK.

BARLEY.—The general character of the fully developed plant of the two and six rowed species. The barley corn compared morphologically with wheat and other cereals. Microscopic study of the minute structure of the barley corn. Barley starch, and starch from other sources. Practical study of different kinds of barley. Quality and condition. Commercial valuation. Vitality as determined by germinator. Natural and excess moisture in barley.

MALTING.—Water absorbed during steeping. General study of barley during germination and growth. Microscopic changes in embryo and endosperm. Growth and nutrition of embryo separated from endosperm. Action of cytase and diastase. Respiration during germination. Effect of heat during drying. Yield of malt from barley. The physical examination of malt. Special methods employed in the chemical examination of malt including determinations of extract, moisture, acid, ready formed carbo-hydrates, soluble uncoagulable albuminoids, and diastatic power.

THE MASHING PROCESS.—A preliminary study of the carbo-hydrates introducing and familiarising the student with the special methods employed in work connected with this subject. Transformation of starch by acids. Transformation of starch by diastase. Influence of temperature on transformation. The products of transformation. Temperature and the mashing of malt. Mashing with raw grain. Mixing heats, and temperature due to hydration. Inversion of cane sugar by acids and yeast. Analysis of worts and beers. Analysis of sugars used by brewers. Raw and treated grain; chemical examination and extract.

FERMENTATION.—*Part I.*—The physiology of fermentation change. Nutrition of yeast. Products of alcoholic fermentation. Aërobic and anaërobic conditions. The enzymes of yeast and their actions. Autodigestion of yeast.

Part 2.—Yeast growth in gelatine media. Hansen's method of pure yeast culture from a single cell. Other methods. Various forms of growth assumed by single species. Hansen's film growth. Ascospore formation; influence of temperature and time. The leading types of yeast; sporulation, film growth, and powers of "attenuation." Wild yeasts. The common moulds. *Amylomyces Rouxii* and its distillery use.

Part 3.—The diseases of beer. *Mycoderma Vini*. The acetic ferments. *Saccharobacillus Pastorianus* and the lactic ferments. *Pediococci*, and "ropy" beer. *Bacillus Viscosus*. The "forcing" of ales and examination of forced samples. Secondary fermentations. Detection of organisms in air and water, and methods of tracing sources of contamination in the brewery. The Pasteurization of ale. Antiseptics; their action on living organisms. Their chemical examination.

HOPS.—Physical examination of leading kinds; their commercial valuation. Estimation of Resins, and Tannin. Detection of Sulphuring.

FININGS.—The various kinds of isinglass and their commercial valuation. The preparation and action of finings.

WATER ANALYSIS.—Treated especially from a brewer's point of view. The materials used in treating brewing waters.

CARAMEL. Examination, and valuation by tintometer. Use and methods of testing instruments employed in a brewery. Examination of coal and coke for malting purposes; etc.

During the progress of this course of laboratory work a series of lectures will be given by the Professor accompanying, as closely as possible, the course of work followed by the students, in which the technical bearing of the work done will be thoroughly explained. This course of lectures also embraces all the main points connected with the science and practice of brewing and malting, and is made as full and comprehensive as possible, special

attention being given to the most recent advances in brewing technology and the progress of scientific knowledge bearing on the fermentation industries.

A course of lectures will also be given by the Lecturer on the special chemistry of the carbo-hydrates.

During the course of instruction practical demonstrations will be given on the selection and valuation of barley, malt, hops, and other materials used by brewers, and the students will be encouraged to familiarise themselves by practice with the usual commercial methods of judging such materials. In order to facilitate this a comprehensive series of samples will be provided for the use of the students, and in time, it is hoped, a museum will be formed.

EXCURSIONS.

At suitable times during the course of instruction visits will be made to breweries and maltings in the neighbourhood, permission having been courteously given by several brewers. During these excursions, which will be conducted by the Professor, students will have the advantage of seeing in practical operation the technical points they are studying.

Each student is expected to keep a laboratory note book, in which full notes must be made on the work he has done, and these books will be examined from time to time by the Professor or his Assistant.

At times during each term examinations will be held on the work done, at which it is expected all students will be present.

At the end of the last term a general practical and written examination in the science and practice of Brewing and Malting will be held for those students working for the Diploma of the University; but it should be distinctly understood that, although a student must pass this examination satisfactorily in order to take the Diploma, the general character of the work done during the whole course of instruction will be taken into account by the examiner.

SHORT AND SPECIAL COURSES.

These courses for students not taking the Full course for the Diploma, are not laid down, for reasons already explained in the Introduction, but students entering for them will, for the time being, share all advantages equally with the Diploma students, and when considered necessary a special course of lectures or demonstrations will be arranged for their benefit.

LIBRARY.

A small library of books more especially bearing on Brewing and the kindred fermentation industries will be provided in the laboratory for the use of students; but most of the books will be for reference only and must not be taken away without special permission. The extensive Library of the University will also be open to students.

The following are a few of the books specially recommended to students: "Text-book of the Science of Brewing," Moritz and Morris (Spon). "Laboratory Text-book for Brewers," L. Briant (Fell and Briant). "Practical Brewing," Southby. "The Principles and Practice of Brewing," Sykes (Griffin and Co.). "Practical Studies in Fermentation," E. C. Hansen (Spon). "The Microscope in the Brewery," Matthews and Lott (Bemrose). "The Micro-Organisms of Fermentation," Jørgensen (Lyon).

DIPLOMA COURSE.—FIRST YEAR TIME TABLE.

SUBJECT.		FEES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Mathematics...	<i>Entrance Fee</i> ...	£1 1 0						
Physics	Lectures....	4 4 0	10.30	10.30	..	10.30	10.30	...
	Session.....							
	Lectures....			11.30	...	11.30	...	...
Ditto	Winter & Spring Summer	4 4 0	{ 4 0	{ ..	{ 4.0	{ ..	{ 4.0	{ ..
	Winter & Spring Summer		{ 2.30-4	{ ..	{ 9.30-11.30	{ ..	{ 2.30-4	{ ..
Chemistry	Lectures....	2 2 0	{ ..	{ ..	{ 11-30	{ ..	{ 11.30	{ ..
	Spring		{ ..	{ ..	{ 11.0	{ ..	{ 11.30	{ ..
Ditto	Winter & Spring Summer	{ 12 12 0	{ 9.30-1	{ 2-5	{ 2-5	{ 2-5	{ ..	{ 9.30-1
			{ 9.30-1	{ 2-5	{ 9.30-1.0	{ 9.30-1	{ 9.30-1	{ 9.30-1
	<i>Deposit for Caution Money</i>	1 0 0						
Botany	Lectures and Laboratory	2 2 0	3-5	...	...	...	3-5	...
Engineering ...	Drawing....	0 10 6	...	...	...	2.30-5	...	...
		£27 15 6						

SYLLABUS OF FIRST YEAR CLASSES.

CHEMISTRY.

Professor: PERCY F. FRANKLAND, Ph.D., B.Sc. Lond.,
Assoc.R.S.M., F.R.S.

Lecturer: CHARLES F. BAKER, Ph.D., B.Sc.

Demonstrator: WILLIAM R. INNES, Ph.D., M.Sc.

WINTER AND SPRING TERMS.

Lectures.—Two hours weekly. Winter Term, 11.30 on Wednesday and Friday. Spring Term, 11.0 on Wednesday, and 11.30 on Friday.

Elementary Inorganic Chemistry.

Laboratory.—Sixteen hours weekly.

General manipulation. Experiments illustrating some of the fundamental principles of chemistry. Preparation and properties of gases.

Systematic qualitative analysis.

SUMMER TERM.

Laboratory.—Sixteen hours weekly.

Systematic quantitative analysis. The gravimetric determination of the more important bases and acid radicles, chosen with a view to illustrating typical methods employed in analytical chemistry.

Volumetric analysis.

Although the object of the laboratory work throughout will be to give the student a general knowledge of analytical chemistry, yet the exercises will be, as far as possible, selected so that he may become familiar with such determinations as are of frequent occurrence in the examination of materials related to the fermentation industries.

FEES:—Lecture Course, £2 2s.

Laboratory Course, £12 12s.

Caution Money Deposit, £1.

BOTANY AND VEGETABLE PHYSIOLOGY.

Professor: WILLIAM HILLHOUSE, M.A., F.L.S., formerly Scholar of Trinity College, Cambridge.

A course of about forty Lectures, with Laboratory work, specially arranged for students in Brewing, will be given throughout the session.

The object of the *Lectures* will be to give the student an insight into the fundamental phenomena of plant life, including the nutritive processes in which ferment action plays a part.

The *Laboratory work* will have the double object of illustrating the Lectures and grounding the students in the use of the microscope as an instrument of observation and investigation. Especial attention will be given to micro-chemistry.

Lecture Days—Monday and Friday (in Winter and Spring Terms) at 3 p.m.

Laboratory to follow each lecture.

FEE:—£2 2s.

PHYSICS.

Professor: J. H. POYNTING, Sc.D., F.R.S., late Fellow of Trinity College, Cambridge.

Lecturer and Demonstrator: GEORGE E. ALLAN, B.Sc. (Lond.).

LECTURE DAYS:—Winter and Spring Terms, Tuesday and Thursday, at 11.30. Summer Term, Monday, Wednesday, and Friday, at 4 p.m.

Statics.—Parallel Forces. Moments. Levers. Balances. Work. Principle of Work. Pulleys. Differential Pulley. Wheel and Axle.

Centre of Gravity. Stability and Instability.

Parallelogram and Triangle of Forces.
Friction. Measurement of Rate of Working.
Elasticity and Rupture of Solids.

Hydrostatics.—Fluid pressure, and propositions regarding it.
Transmission of Fluid Pressure. Hydraulic Press.
Pressure against surfaces. Cistern Walls.
Archimedes' Principle. Floating Bodies. Stability and
Instability of Floating Bodies.
Specific gravity and methods of determining it.
Viscosity. Surface Tension.

Pneumatics.—Boyle's Law. Air Pump. Atmospheric Pressure.
Barometer. Common Pump. Syphon.

Dynamics.—Velocity and Acceleration. Relativity of Velocity.
Resolution and Composition of Velocity. Mass. Weight.
Momentum. Dynamical Measure of Force. Action and
Reaction. Kinetic Energy and Work. Potential Energy.
Pendulum Determination of g .

General Properties of Matter.—Diffusion. Solution. Dialysis.
Osmotic Pressure.

Heat.—Temperature. Thermometers. Expansion. Specific Heat.
Heat and Work. Change of State. Latent Heat. Vapour
Pressure. Water Vapour in Atmosphere. Conduction.
Radiation.

Electricity.—Electrification by Friction. Two Electrical States.
Insulators and Conductors. Induction. Gold Leaf
Electroscope. Frictional Machines. Electrophorus.
Wimshurst Machine. Leyden Jar.
Magnets. Magnetic Field. Earth as a Magnet.
Current. Voltaic Cells. Accumulators.
Magnetic Measurement of Current by Galvanometers.
Ampère. Measurement of E.M.F. Volt. Ohm's Law.
Measurement of Resistance. Ohm.
Electrolysis. Induction of Currents. Induction Coil.

EXERCISE AND PRACTICAL COURSE.

Two to three hours weekly.

The work will consist partly in numerical exercises on the lecture work, and partly in simple measurements.

TEXT BOOKS.—Cumming's Mechanics (Rivington and Percival, 3s.). Glazebrook's Heat (Camb. Univ. Press, 3s.). Jamieson's Elementary Magnetism and Electricity (Griffin, 3s. 6d.).

FEE :—£4 4s.

MATHEMATICS.

Professor: R. S. HEATH, M.A., D.Sc., late Fellow of Trinity College, Cambridge.

Lecturer: W. H. AUSTIN, B.A., Scholar of Trinity College, Cambridge.

Four hours weekly, at 10.30, on Monday, Tuesday, Thursday, and Friday.

The subjects treated in this Class will include:—

ARITHMETIC:—Ordinary Rules, Vulgar and Decimal Fractions, Extraction of Square Root, Methods of Approximation, Proportion, Interest, Discount, Stocks.

ALGEBRA.—Ordinary Rules, Factors, Fractions, Simple Equations in one or more unknown quantities. Quadratic Equations and Problems.

GEOMETRY.—The substance of Euclid I.—IV.

FEE:—£4 4s.

ENGINEERING DRAWING.

Professor: F. W. BURSTALL, M.A. (Cantab.), A.M.I.C.E.,
M.I.M.E.

Lecturer and Demonstrator: F. H. HUMMEL, A.M.I.C.E.

Two and a-half hours per week during the Summer Term.

Freehand Model Drawing of simple machine parts, the use of scales, Mechanical Drawing in plan, elevation, and section from freehand sketches.

Thursdays, from 2.30 to 5.

FEE:—10s. 6d.

DIPLOMA COURSE.—SECOND YEAR TIME TABLE.

SUBJECT.		FEEs.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Chemistry ...	<i>Entrance Fee</i>	£1 1 0						
	Lectures.....		{ 9.30	9.30	9.30	9.30	9.30	...
	Winter		{ 9.30	9.30	9.30	9.30	...	...
Ditto	Laboratory..		{ 9.30	...	9.30	...	9.30	...
	Winter		{ 10.30-1	10.30-1	10.30-1	10.30-1	10.30-1	9.30-1
	Spring		{ 10.30-1	10.30-1	10.30-1	10.30-1	10.30-1	9.30-1
<i>Deposit for Caution</i>	Summer.....		{ 10.30-1	10.30-1	10.30-1	10.30-1	10.30-1	9.30-1
	Lectures & Practical							
	Lectures.....		3-5	...	3-5	...	3-5	...
Geology	Lectures.....	0 10 6	...	...	...	2.0	...	...
	Lectures.....	1 1 0	2.30	...	2.30	...	...	...
	Lectures.....	0 10 6	...	...	...	2.30	...	...
Engineering ..	Summer.....			...	...	...	...	...
	Laboratory..		2-5	...	...	...	...	...
	Summer.....			...	...	...	...	...
		£28 16 6						

SYLLABUS OF SECOND YEAR CLASSES.

CHEMISTRY.

Professor: PERCY F. FRANKLAND, Ph.D., B.Sc. (Lond.),
Assoc.R.S.M., F.R.S.

Lecturer: CHARLES F. BAKER, Ph.D., B.Sc.

Demonstrator: WILLIAM R. INNES, Ph.D., M.Sc.

WINTER AND SPRING TERMS.

Lectures and Tutorial Class.—Five hours weekly.

Winter Term: 9.30 to 10.30, Monday, Tuesday, Wednesday, Thursday, and Friday.

Spring Term: 9.30 to 10.30, Monday, Tuesday, Wednesday, and Thursday.

General course of Inorganic Chemistry. The subject will be dealt with more fully than in the Elementary Course. The scope of these lectures is perfectly general, but wherever opportunity arises reference is made to the applications of the science in the more important industries. The course is arranged with a view to conveying such a knowledge of the science as is indispensable alike for general culture, for those who are commencing the special study of chemistry, and for those who purpose devoting themselves to professions and occupations involving the utilisation of chemical principles.

Laboratory.—Eighteen hours weekly.

Introduction to the operations involved in the preparation of organic compounds, including fermentation and fractional distillation.

Elementary Organic Analysis.

Water Analysis and simple Gas Analysis.

SUMMER TERM.

Lectures.—Four hours weekly, 9.30 to 10.30, Monday, Wednesday, and Friday; 4 to 5, Monday.

Elementary Organic Chemistry (three hours weekly). These lectures, although perfectly general in their scope, will include references to the action of ferments and the principal fermentation processes, whilst special attention will be given to the Chemistry of the Sugars and other carbohydrates.

General Course of Inorganic Chemistry (one hour weekly). Conclusion of the course commenced in the winter term.

Laboratory.—Eighteen hours weekly.

Continuation of the work indicated above.

FEES :—Lecture Course, £6 16s. 6d. ; Laboratory Course, £12 12s. ; Caution Money Deposit, £1.

BACTERIOLOGY.

Professor: R. F. C. LEITH, M.A., M.B., B.Sc., F.R.C.P. Edin. : assisted by W. D'ESTE EMERY, M.D., B.Sc.

The bacteriological course comprises Lectures, Demonstrations, and Practical instruction in the principles and practice of Bacteriology, especially in their application to the study of brewing. It will include the general structure of bacteria, their relations to food, moisture, temperature, oxygen, light, etc. ; their multiplication, their powers of resistance, spore formation. Position and classification. Their general methods of action. Methods of sterilization. Preparation of culture media. Isolation and cultivation of germs. Pure cultures. Methods of examination, staining, etc.

Days of meeting.—Mondays, Wednesdays, and Fridays, beginning in middle of January.

FEE :—£3 3s.

ENGINEERING.

Professor: F. W. BURSTALL, M.A. (Cantab.), A.M.I.C.E.,
M.I.M.E.

Demonstrator: F. H. HUMMEL, A.M.I.C.E.

Two hours per week for one term.

SYLLABUS OF LECTURES.

Machinery for hoisting and lifting.—Pulley blocks, screw and hydraulic jacks, windlasses, conveyors.

Boilers.—Cornish, Locomotive, Lancashire, water tube. Heating value of coals, coke, and oils, efficiency of boilers.

Steam Engines.—Elementary Theory. Types of horizontal, vertical, pumping, and high-speed engines.

Oil and Gas Engines.—Otto Cycle, Elementary Theory, governors, ignition, forms of valves, water jacket, production of gas for motive power.

Oil Engines, vaporizers, Hornsby, Priestman, and Desel motors.

Pumping machinery and piping for water and other liquids.

Artificial production of cold, general theory of inverse heat engines, water and air cooling, ice making, cold air machines (Bell-Coleman), ammonia machines (Linde), carbonic acid machines (Hall).

Filtration.—General principles, types of filtration beds, gravel, sand, and carbon filters, filtration presses.

FEE: £1 IS.

ELECTRICAL ENGINEERING.

Professor of Engineering: F. W. BURSTALL, M.A.,
Cantab., A.M.I.C.E., M.I.M.E.

Lecturer on Technical Electricity: D. K. MORRIS,
Ph.D., A.I.E.E.

Lectures.—One hour weekly in third term, Thursday, from 2.30 to 3.30.

Practical work.—Three hours, Mondays, from 2 to 5.

The course will include a general account of the principles of dynamos and motors, and the practical work will consist of illustrations of these principles.

FEE FOR LECTURES: 10s. 6d. ; for Practical Course, £2 2s.

GEOLOGY.

Professor: CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor: W. W. WATTS, M.A., F.G.S., late Fellow of Sidney Sussex College, Cambridge.

Assistant Lecturer and Demonstrator: FRANK RAW, B.Sc.

The following Syllabus of a course of Six Lectures upon the Geology of the Water-bearing Rocks summarizes that part of Applied Geology which deals with the subject of Water Supply as related to Brewing. The Lecture Course will follow the lines here laid down, but merely in broad outline. The object of the course is to afford the student a broad sketch of the principles and methods of the subject as a whole, and a general conception of its utility and application.

For Advanced Students, Managers, &c., a more detailed and advanced course with some practical geological work—laboratory or field work—is very desirable.

OUTLINES OF THE GEOLOGY OF WATER-BEARING ROCKS.

All water-supply dependent upon Rainfall. Rainfall carried off by (a) *Evaporation*; (b) *Surface drainage*; (c) *Subterranean drainage*. The last is of the greatest importance for water-supply for Brewing purposes, and is dependent upon the Superficial Geology and the Solid Geology of any special district.

SUPERFICIAL GEOLOGY.

Soils, sub-soils, alluvia, and drifts; their characters and arrangement.

SOLID GEOLOGY.

- (i.) The various *kinds of subterranean rock-sheets*: (*a*) the arenaceous pebble beds, conglomerates, and sandstone; (*b*) the aluminous clays, shales, and marls; (*c*) the calcareous and carbonaceous strata, &c.
- (ii.) The mode of *arrangement of the solid rock-sheets*: (*a*) their stratification, lamination, &c.; (*b*) their thickness and extent; (*c*) their arrangement in geological formations and systems; (*d*) their distribution in Britain.
- (iii.) The *accidents which the rock-sheets have undergone*, their inclination, folds, faults, joints, and fissures.
- (iv.) How to interpret and utilize *Geological Maps and Sections*.

UNDERGROUND WATER-CIRCULATION.

- (i.) Phenomena of the *percolation and movements of underground water* (*a*) as determined by the more or less porous nature of the rock, the inclinations and relations of the strata, and by the rock joints and fissures; (*b*) as affected by (1) mineral matters carried on in solution, (2) deposited and removed in passage, (3) carried off in solution; and (*c*) as illustrated and utilized in Springs and Wells.
- (ii.) *Quantity of Underground Water* in any district as dependent upon (*a*) form and drainage of the country; (*b*) thickness and inclination of the permeable strata; (*c*) size and area of outcrop; and (*d*) the underground complications.
- (iii.) *Quality of the Underground Water* (hardness, softness, purity, etc.) in any district as affected by (*a*) the areas covered by vegetation, devoted to agriculture or mining, or contaminated by presence of large population, etc.; (*b*) by the kinds and distribution of soils and subsoils; or (*c*) by the nature of rocks and rock cements etc., of the subterranean strata.

THE WATER-BEARING ROCK FORMATIONS OF THE MIDLANDS.

The individual characteristics; the areas where they outcrop and where they are water-yielding; and the local quantity and quality of their waters.

Lecture Day.—Thursday, 2 to 3, during Spring Term, or by arrangement.

FEE: 10s. 6d.

THIRD YEAR CLASSES.

BREWING.

Professor : ADRIAN J. BROWN, F.I.C.

Assistant Lecturer and Demonstrator : J. H. MILLAR,
F.I.C.

During the three terms of this year the students will devote the whole of their time to scientific and technical instruction in the School of Brewing.

An abridged Syllabus of the course of practical work they will follow is given on page 47.

ESTIMATED FEES for Third Year Classes, £26 5s.

SUMMARY OF FEES.

			£	s.	d.
FIRST YEAR	...	...	27	15	6
SECOND YEAR	...	...	28	16	6
THIRD YEAR (estimated)	...		26	5	0
			<hr/>		
			£82	17	0
			<hr/>		

DAY TRAINING COLLEGE,
FOR THE TRAINING OF TEACHERS IN PUBLIC
ELEMENTARY SCHOOLS.

Master of Method (Men):

FRANK ROSCOE.

Head Mistress (Women):

MISS A. H. JOYCE.

Assistant Mistresses:

MISS F. C. M. CLARK, B.A. Lond.

MISS LILIAN BROWN.

MISS FLORENCE WARREN.

MISS A. N. JOHNSTON, B.A. (Vict.)

In connection with the University there is a Training College, with departments for men and women, constituted under the regulations of the Board of Education, with the object of preparing students to become certificated teachers in Public Elementary Schools.

The ordinary Course covers two years, permission to reside for a third year being granted by the Board of Education in certain cases of special fitness.

Before admission Candidates must satisfy the following requirements:—

- (a) Obtain a first or second class in the Queen's Scholarship Examination or pass one of the examinations accepted by the Board of Education as equivalent thereto.
- (b) Satisfy the Medical Officer of the College as to their general health and physical fitness to undertake the work of teaching.

- (c) Have attained the age of 18 years on the 1st September immediately preceding admission.
- (d) Sign a declaration that it is their bona-fide intention to take up the work of teaching in public elementary schools.

After admission, students pursue in general subjects the curriculum of the University, this Course being recognised by the Board of Education as equivalent to Part II. of the Certificate Syllabus. In addition they receive professional training in the form of :—

- (a) Lectures on the theory and practice of teaching.
- (b) Practice under supervision in certain of the Board Schools of the City.
- (c) Criticism and demonstration lessons.

This Course, with lessons in Reading, Music, &c., is intended to prepare for the Examination held annually by the Board of Education in the subjects of Part I. of the Certificate Syllabus.

During residence an annual grant of £25 in the case of men, and £20 in the case of women is received from the Board of Education. From this sum are deducted the University fees, amounting annually to £12 10s. (men) and £10 (women). The remainder serves as a contribution towards the cost of board and lodging, books, &c.

There is no hostel connected with the University, but students must reside with their parents or guardians, or in lodgings approved by the Master of Method or the Head Mistress, who exercise general supervision over their conduct and studies.

For forms of application and other particulars application should be made to

MR. F. ROSCOE (Men),

MISS JOYCE (Women),

The University of Birmingham.

SYLLABUS

OF

PRELIMINARY COURSES.

These Courses of Lectures are intended for Students preparing for the Matriculation Examination of the University, for Students preparing to enter the Courses in Engineering, for Students of the Day Training College, and any others who may wish to join them.

ENGLISH LANGUAGE, LITERATURE AND HISTORY.

Professor : W. MACNEILE DIXON, Litt.D., M.A., LL.B., Dub.

Lecturer : R. PAPE COWL, M.A., Dub.

- (i.) Outlines of English History and Literature.

[Stepford Brooke's Primer represents the standard of knowledge required in English Literature.]

- (ii.) English Grammar, including Parsing and Analysis.

- (iii.) Shakspeare's *Henry V.*

Language and Literature.—Mondays and Wednesdays, at 9.30.

FEE :—£2 12s. 6d.

History.—Tuesdays and Thursdays, at 9.30.

FEE :—£2 12s. 6d.

Composition.—In this Class there will be a study of Prose Composition. Members of the class will be expected to write Essays on the subjects from time to time suggested. The Lectures will be given during the Winter and Spring Terms at 2.30 on Thursdays.

FEE :—£1 1s.

[The combined Sessional Fee for the Matriculation Course is £5 5s.]

LATIN.

Professor : E. A. SONNENSCHIN, M.A., Oxon.

Lecturer : J. W. CROWFOOT, B.A., Oxon.

ELEMENTARY.

Tuesdays and Thursdays, at 4.30.

This Course is designed for beginners desirous of taking one of the Preliminary Courses (A or B) during the Session 1901—1902.

A Latin Reader will form the centre of instruction, the elements of Grammar being acquired by way of reading and easy composition based on the vocabulary and subject matter of the Reader.

FEE :—£2 12s. 6d.

PRELIMINARY.

(For Matriculation Examination).

Mondays, Wednesdays, and Fridays, at 4.30.

This class will meet in two Sections (A and B), at the same hour.

SUBJECTS—SECTION A. The *Catiline* of Sallust, with easy composition, of Matriculation standard.

SECTION B. The Invasion of Britain (being selections from Cæsar, *De Bello Gallico*, Books IV, V.), with easy composition based on the vocabulary and subject matter of the selections.

FEE (for either Section):—£3 13s. 6d.

GREEK.

Professor : E. A. SONNENSCHIN, M.A., Oxon.*Lecturer* : J. W. CROWFOOT, B.A., Oxon.

Mondays, Wednesdays, and Thursdays, at 3.30.

This Course is designed for students preparing for Matriculation or desirous of taking the first University Course during the Session 1901—1902.

A Greek Reader will form the centre of instruction, easy extracts from a Greek author being added as circumstances may demand (*e.g.*, the *Charon* and *Timon* of Lucian). Elementary Composition will also be practised.

FEE :—£3 13s. 6d.

FRENCH.

Professor : C. BÉVENOT, M.A., Oxon.*Lecturer* : R. LECLÈRE, Lic. ès Lettres.

Tuesdays and Thursdays, at 4.30; and Fridays at 10.30 (Conversation).

This Course is designed to prepare candidates for the Matriculation Examination, and will include translation from the prescribed book, instruction in Accidence and elementary Syntax, Composition, Writing from Dictation, Conversation, and practice in correct Pronunciation.

Book prescribed for 1901, "L'émeraude des Incas," by Charles Normand (Macmillan).

FEE:—£3 13s. 6d.

GERMAN.

Professor: HERMANN GEORG FIEDLER, Ph.D., Leipzig.

Lecturer: CARL WICHMANN, Ph.D., Kiel.

Mondays, Wednesdays, and Fridays, at 2.30.

An Elementary German Reader and the book set for the Matriculation Examination will form the centre of instruction, a knowledge of German Accidence and Elementary Syntax being acquired by way of reading. Composition, Dictation, and Conversation will also be practised, the Course covering preparation for the Matriculation Examination.

FEE:—£3 13s. 6d.

MATHEMATICS.

Professor: R. S. HEATH, M.A., Cantab., D.Sc., Lond., late Fellow of Trinity College, Cambridge.

Lecturer: W. H. AUSTIN, B.A., Cantab. et Lond., Scholar of Trinity College, Cambridge.

Mondays, Tuesdays, Thursdays, and Fridays, from 10.30 to 11.30.

ARITHMETIC.—The ordinary rules, vulgar and decimal fractions, methods of manipulation of decimals in approximations, square root, proportion, interest, discount, stocks.

ALGEBRA.—The ordinary rules, factors, fractions, simple equations in one or more unknown quantities, quadratic equations and problems.

GEOMETRY.—The substance of Euclid, Books I.—IV. with Exercises.

FEE:—£4 4s.

MECHANICS.

Professor : J. H. POYNTING, Sc.D., Cantab., F.R.S., late Fellow of Trinity College, Cambridge.

Lecturer : GEO. E. ALLAN, B.Sc., Lond.

Assistant Lecturer : G. A. SHAKESPEAR, B.A., B.Sc.

Lecture Hours.—Tuesdays and Thursdays, from 11.30 to 12.30.

Practical Class.—Mondays, from 11.30 to 12.30, and 2.30 to 3.30.

STATICS.—Force measured in pounds weight or grammes weight. Equilibrium under two equal and opposite Forces. Equality of the Action and Reaction between two bodies. Transmissibility of Force by strings, ropes, and rigid connections. Experimental investigation of the conditions for the equilibrium of a body when acted on by three parallel forces. Resultant. Moment of a force about a point. Balancing of moments when a body is in equilibrium. Centre of Parallel Forces. Centre of Gravity and the experimental investigation of its position. Stability and Instability of a body, supported from a point or on a base. Work and Rate of Working. Foot pound and Horse Power. The lever, the balance, the single string system of pulleys, the wheel and axle, the differential pulley, as illustrations of parallel forces, and of the Principle of Work. Experimental investigation of the conditions for the equilibrium of a body when acted on by three forces not parallel. The Triangle of forces. The parallelogram of Forces. Graphic resolution and composition of Forces. Simple cases of resultant of two forces acting at a point. Balancing of Moments when a body is in equilibrium. Inclined Plane. Windmill. Sailing. Screw, toothed and worm wheels, as treated by the principle of Work. Efficiency of Machines : always reduced by friction.

HYDROSTATICS.—Distinction between liquids and gases. Pressure at a point in a fluid. Equality of pressure at points on the same level. Change of pressure with depth. Surface of a liquid level. Transmission of pressure in liquid. Hydraulic Press. Pressure against horizontal surfaces and vertical containing walls. Archimedes Principle. Density and Specific Gravity. Methods of finding specific gravities. Relation between volume and pressure in a Gas. Air Pumps. Atmospheric Pressure. Barometers. Common Pumps. Force Pump.

DYNAMICS.—Units of Length and Time. Velocity. Uniform acceleration. Use of formulæ connecting velocity, time, and distance travelled, with acceleration. Mass. Equal masses are those having equal acceleration under equal forces. Simple experiments to show that mass is proportional to weight at the same place. Constancy of mass under change of physical and chemical condition. Momentum and rate of change of momentum. Force measured by rate of change of momentum. Dyne and poundal. Momentum measure of Force proportional to its weight measure. Relation between weight measure and momentum measure. *g*. Atwood's machine. Momenta generated in two bodies by their mutual action, equal and opposite. Constancy of Momentum. Kinetic Energy and Work.

FEE:—£4 4s.

CHEMISTRY.

Professor: PERCY F. FRANKLAND, Ph.D., Würzburg, B.Sc., Lond., F.R.S.

Lecturer: C. F. BAKER, Ph.D., Strasburg, B.Sc., Lond.

Demonstrator: W. R. INNES, M.Sc., Ph.D.

Wednesdays and Fridays, at 11.30, during the Winter and Spring Terms.

Gaseous, liquid, and solid states of matter.

Nature of chemical change. Elements, compounds, and mixtures.

Types of chemical action.

Solution, crystallisation, distillation, diffusion.

Chemical and physical properties of air and water.

Nature of acids, bases, and salts.

Nature, occurrence, chief modes of preparation, and principal properties of the following non-metallic elements and their more important compounds: Hydrogen, Oxygen, Carbon, Silicon, Sulphur, Nitrogen, Phosphorus, Fluorine, Chlorine, Bromine, and Iodine.

Combination by weight and volume. Symbols, equations, and calculations relating to weight and volume. Nomenclature.

Chemical and Physical characteristics of metals as illustrated by Sodium, Calcium, Iron, Zinc, Lead, Mercury, Copper, and Silver.

This course of experimental lectures is adapted to the needs of those who are entirely unacquainted with Chemistry, and for those who are preparing for the Matriculation Examination of the University.

FEE :—£2 2s.

PHYSIOGRAPHY.

Professor : CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor : W. W. WATTS, M.A., Sec.G.S.

Demonstrator : FRANK RAW, B.Sc., Lond.

ELEMENTARY PHYSIOGRAPHY.*

(For Matriculation Examination.)

The Earth in its relation to the other bodies in the Solar System : The form and size of the globe ; its movements and their effects in day and night, the seasons, eclipses.

The Surface of the Earth : General distribution of land and water ; the contour, relief, and chief features of the continental land areas.

The Atmosphere : Its composition and density ; the determination, distribution, and representation of its temperature and pressure ; the circulation of the air, permanent and periodic winds, storms ; the moisture of the air, dew, hoar-frost, fog, mist, clouds, rain, snow and hail ; general distribution of rainfall and its causes ; weather-charts and storm-warnings ; climate.

The Sea : Composition, specific gravity, and temperature of sea-water ; depths of the ocean, form and deposits of its floor ; movements of the ocean-water, waves, tides, and currents.

The Land : The chief constituents of the earth-crust, stratified and unstratified rocks ; the work of rain, frost, rivers and ice ; springs, glaciers, valleys, water-falls, lakes, meadows, deltas ; earth-movement and earthquakes ; volcanoes, their phenomena and distribution.

Life : The geographical distribution of animals and plants ; biological regions.

Lectures.—One hour weekly, Thursdays at 3.30.

FEE :—£1 11s. 6d.

* For the Syllabus of "Advanced Physiography," see *Special Courses*, p. 247.

BOTANY.

Professor : W. HILLHOUSE, M.A., Cantab, F.L.S.

Lecturer and Demonstrator : WALTER E. COLLINGE, F.Z.S.

Lecture Days :—In the Winter and Spring Terms, Thursdays, 11.30 to 1; in the Summer Term, Tuesdays and Thursdays, 11.30 to 12.30.

The Lectures will cover the following Syllabus for the Matriculation Examination :—

A. *Plant Form as a Key to Relationships.*

- (1) The chief characters of root, stem, bud, and leaf of the principal British plants of quite general distribution and of garden plants of general cultivation, and with the nature and structure, as determinable by eye or lens, of common bulbs, fruits, seeds, or other vegetable products in ordinary use, and universally met with in shop or market.
- (2) The most important floral and fruiting characters of the following British Natural Orders :—Ranunculaceæ, Cruciferae, Violaceæ, Caryophyllaceæ, Leguminosæ, Rosaceæ, Umbelliferae, Compositæ, Primulaceæ, Scrophularineæ, Labiatae, Cupuliferae, Liliaceæ.

B. *How Plants Live, Grow and Reproduce.*

- (3) The mode of development of the plant, the elementary facts of nutrition and respiration, the nature and function of root, stem and leaf, and their relations with external conditions and forces, to be determined *experimentally* by the aid of seedlings grown in the class-room from the following typical seeds or one-seeded fruits, viz., castor-oil or buck wheat, pea or bean, sunflower, mustard or cress, and maize, wheat or barley, and the bulb of hyacinth or onion.
- (4) The functions of the floral parts, their relations with pollination, the production and protection of seeds, and the provisions for seed-dispersal, especially as illustrated in the Natural Orders named above.

FEE :—£2 2s.

ANIMAL BIOLOGY.

Professor : T. W. BRIDGE, Sc.D., Cantab., F.L.S.

Lecturer and Demonstrator : WALTER E. COLLINGE, F.Z.S.

Lecture Days :—Saturdays at 11.30.

A course of about twenty-five lectures on Animal Biology, with practical demonstrations, will be given

during the Session. The course will meet the requirements of Matriculation Candidates who desire to take Animal Biology as one of their optional subjects.

SYLLABUS.

- (1) Distinctive properties of living matter or protoplasm, as illustrated by the structure and mode of life of the Proteus-animalcule or *Amœba*. Differences between Animals and Plants. The nature of the Cell.
- (2) The general structure of the Frog. Elementary physiology of the Frog. The organs of digestion and their use. The nature of blood. The structure of the heart, and the arrangement of the more important blood vessels. The use of a circulatory system. The nature of excretory organs. Mode of breathing. The kidneys and their use.
- (3) The more important facts in the structure and habits of the fresh water Polype (*Hydra*); the Earth Worm (*Lumbricus*); and the Cray Fish (*Astacus*).
- (4) Methods of reproduction in animals. The egg-cell and the sperm-cell. Fertilization of the egg. Segmentation of the fertilized egg. The metamorphosis of the Frog, treated in an elementary fashion.

FEE: £1 11s. 6d.

TIME TABLE OF PRELIMINARY CLASSES.

CLASS.	Mon.	Tues.	Wed.	Thurs.	Fri.
English Language and Literature	9.30	...	9.30	...	...
English History .....	...	9.30	...	9.30	...
English Composition (Winter and Spring) .....	...	...	...	2.30	...
Latin (Elementary).....	...	4.30	...	4.30	...
Latin (Matriculation).....	4.30	...	4.30	...	4.30
Greek	3.30	...	3.30	3.30	...
French .....	...	4.30	...	4.30	10.30
German	2.30	...	2.30	...	2.30
Mathematics, A.	10.30	10.30	...	10.30	10.30
Mechanics.....	...	11.30	...	11.30	...
Mechanics (Practical).....	11.30 2.30	...	...	...	...
Chemistry (Winter & Spring) .....	...	...	11.30	...	11.30
Physiography .....	...	...	...	3.30	...
Botany (Winter & Spring)...	...	...	...	11.30	...
Botany (Summer) .....	...	11.30	...	11.30	...
* Animal Biology .....	..	...	...	..	...

* Saturdays at 11.30 a.m.

SYLLABUS
OF
SPECIAL COURSES
IN
THE FACULTIES
OF
SCIENCE AND ARTS.

These Lecture Courses are arranged for students desirous of studying a single subject or one of its branches, for the students in the Day Training College, for teachers, and others who may desire to attend them.

PHILOSOPHY.

Professor : J. H. MUIRHEAD, M.A., Oxon. and Glasgow.

I.

Logic.

Men—Thursdays, from 12.30 to 1.30.

Women—Wednesdays, from 2.30 to 3.30.

GENERAL ANALYSIS of Reasoning Process.—TERMS : Connotation and denotation of terms, ambiguity, definition, division and classification. PROPOSITIONS : Kinds, equivalence and implication. REASONING : Deductive and inductive. KINDS OF DEDUCTIVE REASONING : The syllogism, general principle of syllogistic reasoning, forms of it, the conditional syllogism, dilemma. INDUCTION : Generalisation from experience, analogy, scientific analysis to prove laws of nature. HYPOTHESIS AND VERIFICATION.

FEE :—£1 11s. 6d.

II.

Psychology.

Men—Friday, from 11.30 to 12.30.

Women—Tuesdays, from 10.30 to 11.30.

SCOPE AND METHODS of Psychology. Relation of Theory to Practice. BODY AND MIND. GENERAL ANALYSIS of CONSCIOUSNESS. PRIMARY CONDITIONS OF KNOWLEDGE : Attention and Retention. The SENSES and their training. PERCEPTION AND OBSERVATION ; training in observation. IDEAS AND THEIR SEQUENCE. MEMORY ; the training of memory. FANCY AND IMAGINATION. CONCEPTS. JUDGMENT and REASONING. The FUNCTION OF LANGUAGE in relation to thought. PLEASURE AND PAIN. The EMOTIONS and the expression of the Emotions. The SENTIMENTS. INSTINCTS. WILL AND CONDUCT. HABIT AND CHARACTER.

FEE :—£1 11s. 6d.

GEOGRAPHY.

Professor : CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor : W. W. WATTS, M.A., Sec.G.S.

Demonstrator : FRANK RAW, B.Sc., Lond.

THE PRINCIPLES OF GEOGRAPHY.

PHYSICAL AND POLITICAL.

This course of Lectures extends over two years, Physical and Political Geography being taken concurrently.

The first year course will embrace the more elementary portions of both branches of the subject ; the second year course, while dealing chiefly with Advanced Political Geography, will also treat of Advanced Physical Geography, and particularly with its application to the political side of the subject.

This course of lectures embraces (1) a summary of the chief facts known concerning the present *Surface Features*, and the grander *Natural phenomena* of the Earth upon which we live—its lands, its waters, its climates, and its inhabitants ; (2) a study of the *Agents of Change*, organic and inorganic, which have brought about the present form and characteristics of its visible surface, and the distribution and arrangement of its living creatures ; (3) a brief sketch of the *Past history* and changes of the earth's surface ; and (4) an investigation of the present relations of this surface to *Man and his works*, his industries, his commerce, his distribution and progress, in so far as they can be traced through the outlines of the Political Geography of the present day.

In other words, the special aims of the Lectures are :—First, to give the student a general knowledge of the present physical features, the climates and productions of the earth ; next, to show how all these probably came into being, and how they are in continual process of change and development ; and finally, to show how man himself is related to the phenomena of the earth upon which he dwells, how he has peopled its surface, and availed himself of its productions.

Physical Geography.

This course includes about thirty Lectures on Elementary Physical Geography delivered to First Year Students on Thursday, at 3.30, and about thirty Lectures on Advanced Physical Geography delivered to Second Year Students on Monday, at 3.30.

FEE:—£1 11s. 6d.

SYLLABUS.

(The Earth of the Present.)

1. *The Terraqueous Surface* of the Earth in general; the distribution and forms of its land and water areas.
2. *The Lands of the Earth.*
The continents and islands; their boundaries, relief and chief physical features.
3. *The Atmosphere.*
 1. The air, its constitution, temperature and moisture.
 2. Rainfall, winds, storms, &c.
4. *The Waters of the Earth.*
 1. The sea-waters and their composition, currents, tides and climatic effects.
 2. Rivers and inland seas.
- 5 *The Inhabitants of the Earth.*
 1. *Plants.* Their classification and distribution.
 2. *Animals.* Their relationship and arrangement. Biological Provinces.

(The Earth of the Past.)

1. *Agents of Change*, acting on the present surface of the Earth.
 1. *Internal.* Volcanoes, Geysers, Earthquakes, Secular Upheaval and Depression.
 2. *External.*
 - a. *Destructive*—air, frost, ice, wind and weather. Sea waters: rain and rivers.
 - b. *Constructive*—sands, deltas, lakes and sea deposits.
2. *The Record of Past Changes* in the Surface and Life of the Earth as seen in—
 1. *The Earth Crust.*
 - a. Its materials—minerals and rocks. Strata and their dislocations.
 - b. The Geological Formations and Fossils. Classification, life types. Physiographical features of the formations.
 2. *The evidences of the Ice Age*, and of the Antiquity of Man.

3. *The Origin, Development, and present state of the more important features in the Relief and Life of the Earth.*

1. *Mountain Ranges*—Plateaux, Plains, Deserts, &c.

2. *River Basins*—Cañons, Waterfalls, Lakes, &c.

3. *Life Provinces* and their animal and vegetable peculiarities.

TEXT BOOKS RECOMMENDED.—*Junior*: Page and Lapworth; Introductory Text Book of Physical Geography (Blackwood). Simmons; Physiography for Beginners (Macmillan). Mills' Realm of Nature (Murray). *Senior*: Davis; Physical Geography (Ginn). Philip's Class Book of Physical Geography (Philip).

Political Geography.

This course includes about thirty Lectures on Elementary Political Geography delivered to First Year Students on Tuesday, at 3.30, and about thirty Lectures on Advanced Political Geography delivered to Second Year Students on Tuesday, at 11.30.

FEE:—£1 11s. 6d.

The object of this course is to afford the student a broad view of the facts and principles of Political Geography in general, and to show how these facts and principles are illustrated and employed in the detailed study of one or more typical countries in each of the grander divisions of the globe. Commencing with a brief description of Man in general, his races, languages, industries, &c., the lecture course will treat of the chief geographical and political divisions of the globe in order. Each of the great continental divisions, its physiography, productions, peoples, and political sections will be developed in outline, and two or more of its most typical countries will be worked out in further detail. In Europe, the British Islands will be primarily selected for detailed study, and in other parts of the world chief regard will be paid to the British colonies and dependencies.

The following is a general syllabus of the course:—

(*The Earth and Man.*)

1. *Man in General.*—(a) *Races of Mankind*; (b) *Languages*; (c) *Modes of Existence*; (d) *Trades and Commerce*; (e) *Grades of Civilisation*; (f) *Modes of Government.*

(*The Countries of the Earth.*)

2. *Europe.*—(a) Europe in general, its divisions, physiography, countries, chief cities, inhabitants, and productions.

(b) British Islands, relief, climate, products, industries, towns, trade, divisions, and government.

(c) France; (d) German Empire; (e) Russian Empire.

3. *Asia*.—(a) Asia in general; (b) India and other British possessions; (c) China; (d) Turkish Empire.

4. *Africa*.—(a) Africa in general; (b) Egypt; (c) British Africa.

5. *America*.—(a) North America in general; (b) British America; (c) South America in general; (d) Brazil.

6. *Australasia*.—(a) Australasia in general; (b) Australia; (c) New Zealand.

TEXT BOOKS RECOMMENDED.—Keith Johnson; A School Physical and Descriptive Geography (Stanford). Meiklejohn; A New Geography (Holden).

GEOLOGY.

Professor: CHARLES LAPWORTH, LL.D., F.R.S., F.G.S.

Assistant Professor: W. W. WATTS, M.A., Sec.G.S.,
Late Fellow of Sidney Sussex College, Cambridge.

Lecturer and Demonstrator: F. RAW, B.Sc., F.G.S.

Elementary Geology.

Winter and Spring Terms.

During the Winter and Spring terms, a Course of about Twenty Afternoon Lectures (ten in each term) will be delivered on the Outlines of Geology.

These Lectures will be of a popular and untechnical character, and will present a summary of the chief principles, methods, and conclusions of the Science of Geology. They will be illustrated by a series of diagrams, rock specimens, and fossils. This course is intended for beginners in Geology, for amateurs, for those persons of leisure who desire a knowledge of the outlines of the Science, for ladies, and for those who intend to join the Summer Excursion Class.

Admission to the first lecture free.

FEE FOR EACH TERM :—12s. 6d.

SYLLABUS.

WINTER TERM. (PHYSICAL GEOLOGY.)

1. *The Exterior of the Earth-Crust.*

Form and size of the Earth; the atmosphere; oceans; the land and water areas of the globe.

2. *The Materials of the Earth-Crust.*

Rock-forming minerals, rock structure, classification of rocks.

3. *Agents concerned in altering the form and structure of the Earth-Crust.*

(a) *Internal*.—Volcanoes, Geysers, Earthquakes, &c.

(b) *External*.—

Destructive : The air, rain, rivers, frost, glaciers, the sea.

Re-constructive : The atmosphere, rivers, lakes, plants, animals.

4. *Architecture of the Earth-Crust.*

(a) *The Sedimentary rocks*.—Their stratification, jointing, inclination, contortion and faulting.

(b) *The Igneous rocks*.—*Intrusive* : granites, porphyries, &c.
Contemporaneous : lavas, tuffs, and ashbeds.

(c) *The Altered rocks*.—Their cleavage, contact-metamorphism and regional metamorphism.

(d) *The Mineral Veins* and ore beds.

Lecture Hour.—Thursday, at 2.30 p.m.

TEXT BOOKS RECOMMENDED.—Watts ; *Geology for Beginners* (Macmillan). Lapworth ; *Intermediate Text Book of Geology* (Blackwood). Judd ; *The Student's Lyell* (Murray).

SPRING TERM. (HISTORICAL GEOLOGY.)

1. *The Life of the Present*.—Classification of animals and plants ; distribution of life forms ; theories of biological evolution ; mode of preservation of animal and vegetable remains.
2. *The Geological Record*.—History of geological discovery ; principles of chronological classification of formations ; the history of the geological record.
3. *The Fundamental Rocks*.—The crystalline formation ; their great extent ; richness in minerals, and barrenness of life.
4. *The Dawn of Existence*.—The primeval islands and shallow seas of Western Europe ; their prolific and remarkable forms of animal life.
5. *The Continental Period*.—The western mountain ranges, and great British lakes of Old Red Sandstone time ; the coral banks and fern forests of the Coal period ; the great salt-lakes and sandy deserts of the Permian and Trias.
6. *The Great Depression*.—The coral-reefs of the Jura and the Midlands ; gigantic sea lizards and Ammonites. The vast ooze-covered sea-floor of the Chalk.
7. *The Re-emergence*.—The gradual development of the Old World ; formation of the Alps and Himalayas. The British Andes, volcanoes and plant life ; warm climates and remarkable mammalian life of Tertiary time.

8. *The Age of Man*.—The Ice period, its ice sheets and glaciers, appearance of early man, disappearance of the mammoth and its contemporaries, progress of man through pre-historic times.

9. *The Evolution of the Earth Crust*, and the life types with which its surface has been successively peopled.

ADDITIONAL TEXT BOOK RECOMMENDED. — Jukes-Browne : *The Building of the British Isles* (Bell).

Lecture Hour.—Thursday, at 2.30 p.m.

Summer Term.

Local Geology and Excursion Class.

GEOLOGY OF BIRMINGHAM AND DISTRICT.

The main object of this course is to afford the student a practical knowledge of the geological structure of the neighbourhood of Birmingham and of the Midlands generally. The various geological formations found within thirty miles of Birmingham are described in a series of Lectures, illustrated by typical rocks and fossils.

Upon every Saturday when practicable, Excursions are made by the members of the class to the more important geological localities of the district, and the visible phenomena studied in the field.

The members of this class are encouraged and assisted in the collection, determination and preservation of representative rocks and fossils.

This class is intended not only for ordinary students of the science, but also for amateurs and persons of leisure, ladies, collectors, miners, architects, and for all those who take an interest in the geology of the district.

Lecture Hour.—Thursdays, at 2.30 p.m.

FEES FOR THE COURSE :—Excursions and Lectures, £1 1s. ; Lectures only, 12s. 6d.

TEXT BOOK RECOMMENDED.—Lapworth, Watts, and Harrison ; *A Sketch of the Geology of the Birmingham District* (Stanford).

GEOLOGICAL EXCURSIONS.

As a general rule the Excursions take place on Saturdays after 1.0 p.m. A few whole-day excursions are made by arrangement among the members of the class.

FEE FOR THE EXCURSIONS ONLY :—£1 1s.

*Winter and Spring Terms.***Advanced Geology.**

An afternoon Class in Advanced Geology (Tectonic Geology) will also be formed during the Winter and Spring Terms should a sufficient number of students apply. For Syllabus, apply to the Professor of Geology.

Lecture Hour.—Thursdays, at 3.30 p.m.

FEE FOR EACH TERM:—12s. 6d.

PHYSIOGRAPHY.

ADVANCED PHYSIOGRAPHY.

The inter-relation, composition, movements, and origin of the earth, moon, planets, fixed stars, and other celestial bodies; the bearing of spectrum analysis on these investigation; the nebular and meteoritic theories.

The mass and density of the earth: The condition of the interior.

Latitude and longitude: Their use and determination; globes, maps, and projections; terrestrial magnetism.

The precession of the equinoxes, and the revolution of the apsides and their effects.

The Atmosphere: Light and colour; atmospheric electricity; climates, and their distribution in space and time; glacial and genial climates.

The Hydrosphere: Classification, history and origin of the ocean-basins; tides in their relation to planetary evolution; life in the oceans; coral reefs.

The Lithosphere: The composition, arrangement and history of the materials of the earth-crust; formation of rocks; crust movements and their effects; theories of volcanoes and earthquakes, and with regard to the state of the earth's interior; relief of the lithosphere and its causes; plateaux, mountains, plains.

Landscape: Origin and development of landscape features; escarpments and drainage systems; adjustment of streams; divides; terraces; effects of earth movement; youth, maturity, and old age of streams; form and development of coast-lines; history of landscape.

The Physiography of the continents, islands, and ocean basins,

Biological Geography: Classification of animals and plants ; ocean life ; terrestrial life ; causes of distribution : Distribution of the races of mankind : Man as a geographical agent.

Lectures.—One hour weekly, Mondays, at 3.30.

FEE FOR THE COURSE :—£1 11s. 6d.

TIME TABLE OF SPECIAL COURSES.

Class.	Mon.	Tues.	Wed.	Thurs.	Fri.
Logic (Men)	12.30	...
Logic (Women)	2.30	...	...
Psychology (Men)	11.30
Psychology (Women)	10.30	...	...	...
Geography (First Year)	3.30	...	3.30	...
Geography (Second Year) ...	3.30	11.30	...	...	...
Geology (Winter & Spring)	2.30	...
Geology (Advanced) {	3.30	...
Winter and Spring }	3.30	...
Local Geology (Summer)	2.30	...
Physiography (Advanced) ...	3.30

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